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An Analysis of the Attitude of Patients from the Satisfaction of the Laboratory Services in Combined Military Hospitals

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ABSTRACT:

This study in hand aimed measure and analyze the attitude of patients towards laboratory services in Combined Military Hospital Dera Ismail Khan. The laboratory services are the essential part of hospital services. Most of the patients who visit hospitals are normally referred you one or other kind of laboratory services for adequate diagnostic purposes. The prescription, medication or otherwise surgery are based on the result from laboratories. The satisfaction from the care given is linked with the satisfaction of the laboratory services. This study focused on this important management of healthcare area. Population and sample of the study were patients who visited the CMS for laboratory services. A survey was undertaken, structured questionnaire was administered to get data from the sample respondents. To test the difference of view for nominal demographic variables against research variables Chi-Square test was run. Results suggested accepting Null hop thesis as no significant difference recorded for research variables based on demographics. The study will be helpful to hospital administration to ensure patients satisfaction by take adequate measure regarding improvement in laboratories services. This study is limited to only one hospital with small sample size; future researcher may extend it to other hospitals as well as include other hospital services. The study adds valuable knowledge to the theory as well as helpful for the practitioners.

Keywords: Attitude of Patients, Patients Satisfaction, Laboratory Service, Hospital Services, Combined Military Hospitals.

Introduction

Laboratories are play significant role in diagnostic of the causes of the various diseases (Abera, Abota, Legese, & Negesso, 2017. These aid to the physicians and surgeon who largely depends on the results provided by them (Alelign & Belay, 2019). Both public sector and private sector is providing laboratory services to the patients in the country. However, their distribution varies from setting to setting. Clinical laboratory is generally called a Pathology lab. There are two main kinds of labs who collect and process medical specimens and perform tests (Almatrafi, Altaweel, Abdelfattah, Alomari, Yaseen, Alsulami, Abonaji, Alqazlan & Darrar, 2018). Patient satisfaction is one of the critical predictor of the diagnostic services and its quality whereas quality further depends on the skills and excellent technical facilities (Ashdown, 2020). Patient satisfaction helps in the assessment of healthcare services and based on their feedback improvement could be initiated. Monitoring the satisfaction of the patient is critical and useful quality improvement tool (Longest, 2000). The main tasks of a lab are to perform tests on samples of Blood, Urine, and stools to diagnose the disease (Fondoh, AwasomEnow-Tanjong, Richard Fondoh, Njukeng, Shang, Ndasi, Samje, Muluh, & Kinge, 2020). This study aimed to measure the patient's attitude towards laboratory services in the Combined Military Hospital Dera Ismail Khan regarding staff behavior, equipment's, results, and time. This study also highlights the patient's problems/ issues and suggested measure to address them. Inter alia, another objective of the study was to develop a theoretical model to test the variables of the study and to determine the patients' attitude towards laboratory services. Further, to investigate the impact of the demographics in determining the patient's attitudes. The study will help hospital management to understand the problems faced by the patients related to labs in the hospital. Likewise, it will provide a guideline to the future researchers to continue investigations on the topic in more detail in other healthcare settings.

Literature Review

A medical laboratory refers to an establishment containing medical equipment's for example, biomedical equipment, reagent, and materials to perform various kinds of medical laboratory tests on the biological specimen ((Ullah, Khattak, & Naqvi, 2023; Banu, Jehan, & Jehan, 2023; Georgieva, Tsankova, Kaludova, & Ermenlieva, 2014). These tests are performed for management of the disease discovery along with healthy living assessment. The main activities in a laboratory includes for example, management of test requests, patient's preparation, identification, collection of the sample specimen and its safe transportation, storage, processing and examination, validation, interpretation and reporting together with expert opinion or advice (Guo, Duan, Liu, & Jiang, 2017). The treatment as prescription outcomes without laboratory results could lead to self-medication, which is contradictory evidence based medicine and could yield serious health issues (Schneider, Maurer, & Friedberg, 2017). The diagnostic cost is considered and resulting in the poor attitude of the patients. While satisfaction of the patients' is an imperative for the success (Emilia, Gabriela, Violina, & Neli, 2014). A patient is the most significant value in the environment of a hospital, laboratory inclusive (Ellett, Campbell, & Gonsalves, 2010). As a patient contributes to the healthcare safety similarly, he or she contributes to the laboratory services together to the healthcare quality in general. The medical lab are continuously working hard to achieve greater patient's satisfaction thus helping their customers, enhancing quality along with upholding the accreditation (Kundi, 2023; Siddique & Khan, 2023; Hailu, Desale, Yalew, Asrat, *et al*., 2020). However, the concept of the customer service is now to the psyche in healthcare getting momentum and popularity gradually. The satisfaction of patients' is a constituent part of the healthcare quality, which used today for assessment of healthcare/ medical care in the developing countries in particular (Obeta, Udenze, Goyin, & Ojo, 2019). However, until recently the customary assessments were used concerning the technical as well as the physiological outcomes of the lab reports (Teresa & Bekele, 2016), while, a patient and client satisfaction from the services of the medical labs services are equally required particularly in Pakistan and other Asian countries (Arif, 2023).

Health System of Pakistan

Pakistan incurs around 3.38 % from its GDP for social, economic and community services (World Bank, 2023: 2019-2020 projections). While its health spending is only 0.8% which lowest in the region as compared to 1.5% by Sri Lanka and 1.2% by Bangladesh. However, on other reports on health shows that even through population health conditions shows gradual improvement recently, which could be, attributed the children immunization, which is increased, more than doubled along with increasing family planning awareness (Ahmed & Shaikh, 2008). In Pakistan, around 66% people are living in rural areas where illiteracy and poverty is evident coupled with low women status and laughable water and sanitation system greatly influencing the health conditions. Furthermore, lack of scarcity of information concerning wellness and illness, the cultural and health prescriptions, along with social hurdles, cost of healthcare is considered a main impediment for the provision of a best health service delivery, which is again related with the physical and financial accessibility of these services (Shaikh & Hatcher, 2007). Both public and private sectors are working side by side in health service delivery in Pakistan, yet government share is greater than the private sector (Ejaz, Shaikh, & Rizvi, 2011).

Hospital Services

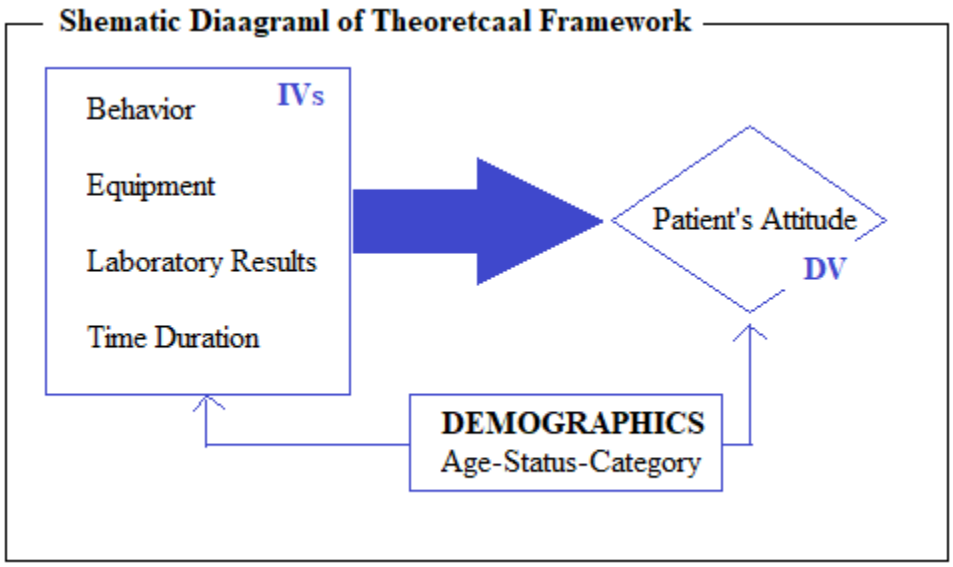
The term healthcare services or medical care implies any service offered to patients by healthcare providers i.e., an individual or an entity operating under the leadership of a health care professional which perform the functions of diagnosis, prevention, or treatment of a disease or impairment inter alia assessing the human beings healthcare (Sosic, Zvonko & Donev, Doncho, 2008). When one thinks about a hospital, all of sudden what comes to his/ her mind is place with a doctor and a nurse treating patients together in a health facility (Jocelyn, Ward, Thorndike, Donelan, & Wexler, 2020). However, it's not only the doctor and nurses, rather, there are other services for example, surgical, ambulatory, anesthesia, medical/clinical services and many more including medical labs, which are associated with patient satisfaction (Koh, Kim, Kim, Chang, Lee, Son, & Kim, 2014). As for laboratory service is concerned, it can accomplish it objectives if function properly and keep in satisfying its clients with quality diagnosis, interpretation, and reporting the results, which is again dependent on the knowledge, skills of the technical professionals, lab machines and chemical as well as behavior and response time (Obeta, Maduka, Bassey, & Mary-Jane, 2019). Skilled staff could provide excellent technical assistance (Obeta, Etukudoh, Mantu, & Ime, 2020). The knowledge and skills capability enhance their understanding about the nature of the disease, thus they can provide a better line for prescription and treatment. Likewise, a patient satisfaction helps in the assessment and improvement of labs services, thus monitoring and assessment of the patient satisfaction is instrumental and valuable quality improvement tool for medical labs particularly and healthcare institutions generally (Longest, 2000).

Combined Military Hospital (CMH)

Combined Military Hospital (CMH) is a health facility working under the Pakistan Military at various military establishments, cantonments meant for military personnel, their dependents, or other authorized clients, and officially run by the physicians of Pakistan's Army Medical Corps. The CMHs are classified into A, B, and C categories depending upon the capability, mostly corresponding to tertiary care, secondary care, and primary level care hospitals. Category 'A' Hospitals are headed by Major General / Brigadier is the "Commandant" assisted by a second-in-command- usually a Colonel, these include CMH Rawalpindi, CMH Lahore, CMH Sialkot, CMH Peshawar, CMH Multan, and CMH Quetta. Where, category 'B' Hospitals are led by a Brig/Colonel as Commanding Officer, these include CMH Abbottabad, CMH Attock, and CMH Gujranwala. Likewise, a category 'C' Hospitals are those whose commandant is a Colonel, in Pakistan these include CMH Bahawalpur, CMH Mangla, CMH Rawalakot, CMH Chunian, CMH Badin, CMH Gilgit, CMH Bannu, and CMH Murree, and category 'D' Hospital are administered by a Lt Col being commanding officer, which includes CMH Sibi, CMH Khuzdar, CMH Zhob, CMH Chorre, CMH Thal, CMH Dera Ismail Khan.

Figure 1

Theoretical Framework



Main-Hypothesis

Predictors determine the attitude of patients towards hospital laboratory services.
Sub-Hypotheses (H_1-H_{12}**)**

H_1: There is no significant mean difference in opinion of males and females patients for staff behavior.
H_2: Male and female patients have same opinion about the laboratory equipment.
H_3: Male and female behave in similar manner about the laboratory tests.
H_4: Male and female patients have sameness in their views about the time duration for test results.
H_5: Officer and non-officer have same opinion about Behavior of the staff.
H_6: There is no significant mean difference between in the opinion of officer and non-officer for the equipment.
H_7: Officer and non-officer behave in similar manner about the laboratory tests.
H_8: Officer and non-officer have similar views about the time duration for test results.
H_9: There is no difference between the views of civilians and non-civilians about the behavior of the staff.
H_{10}: Civilians and non-civilians have same opinion about the laboratory equipment.
H_{11}: Civilians and non-civilians behave in similar manner about the laboratory tests.
H_{12}: Civilians and non-civilians have same views about the time duration are for test results.

Method

The study employed survey approach recommended by (Sekaran, 1999; Yin, 1999; and Babbie, 1993). The population of the study consisted of all individuals who visited the laboratory between 1stJuly 2022 to 13thJuly, 2022 at CMH Dera Ismail Khan. The study randomly selected a sample of one hundred respondents using convenience sampling. A structure questionnaire was administered. The response rate was 93%.

Demographic Profile of Respondents

Table 1

Gender of Respondents

Gender	Frequencies	Percentage
Male	58	58
Female	42	42
Total	100	100

Table 2

Status of Respondents

Status(officer/non-officer)	Frequencies	Percentage
Officers	45	45
Non-Officers	55	55
Total	100	100

Table 3

Categories of Respondents

Category (civ/non civ)	Frequencies	Percentage
Civilians	39	39
Non-Civilians	61	61
Total	100	100

Findings and Analysis

Hypotheses Testing

The proposed hypotheses were tested using multiple statistical tests, which given bellows:

H_1: There is no significant mean difference in opinion of males and females patients for staff behavior.

Table 4

Contingency Table: Observed Frequencies

Gender	Yes	No	Total(RT)
Male	47	11	58
Female	35	07	42
Total(CT)	82	18	100

Table 5

Expected Frequencies

Gender	Yes	No	Total
Male	47.56	10.44	58
Female	34.44	7.56	42
Total	82	18	100

Table 6

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	47	47.56	-0.56	0.3136	0.00659
	11	10.44	0.56	0.3136	0.03004
	35	34.44	0.56	0.3136	0.00911
	07	7.56	-0.56	0.1936	0.04148
Total(GT)					
					∑0.08722

As both variables were nominal, therefore chi-square was used with 0.05 level of significance to check relationship between males and females. The value of Tab χ^2 for 1 degree of freedom was 3.84 and value of Cal χ^2 0.08722. As it could be seen that Cal χ^2 < Tab χ^2 thus, the proposed H_1 is accepted.

H_2: Male and female patients have same opinion about the laboratory equipment.

Table 7

Contingency Table: Observed Frequencies

Gender	Yes	No	Total(RT)
Male	49	9	58
Female	36	6	42
Total(CT)	85	15	100 - (GT)

Table 8

Expected Frequencies

Gender	Yes	No	Total(RT)
Male	49.3	8.7	58
Female	35.7	6.3	42
Total(CT)	85	15	100

Table 9

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	49	49.3	-0.3	0.09	0.00182
	9	8.7	0.3	0.09	0.01034
	36	35.7	0.3	0.09	0.00252
	6	6.3	-0.3	0.09	0.01428
Total(GT)					
					∑0.02896

Again, both variables were nominal therefore, χ^2 was employed to heck the relationship between gender and equipment. At 0.05 level of significance, data yielded 3.84 value for χ^2 Tab at 1 degree of freedom, while Cal χ^2 value was recorded as 0.02896. As could be observed that Cal χ^2value is less than the Tab χ^2 value, thus we accept H_2.

H_3: Male and female behave in similar manner about the laboratory tests.

Table 10

Contingency Table: Observed Frequencies

Gender	Yes	No	Total(RT)
Male	46	12	58
Female	31	11	42
Total(CT)	77	23	100

Table 11

Expected Frequencies

Gender	Yes	No	Total(RT)
Male	44.66	13.34	58
Female	32.34	9.66	42
Total(CT)	77	23	100

Table 12

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	46	44.66	1.34	1.7956	0.04020
	12	13.34	-1.34	1.7956	.1346
	31	32.34	-1.34	1.7956	.0555
	11	9.66	1.34	1.7956	.1858
Total(GT)					
					∑0.4161

For nominal data χ^2 Tab was run at 0.05 level of significance. The computed tab vale of χ^2 Tab was recoded 3.84 for 1 degree of freedom against the Cal χ^{2T}tab value of 0.4161. Since the calculated value is less than the tabulated value, so null hypothesis H_3 is accepted.

H_4: Male and female patients have sameness in their views about the time duration for test results.

Table 13

Contingency Table: Observed Frequencies

Gender	Yes	No	Total(RT)
Male	45	13	58
Female	36	6	42
Total(CT)	81	19	100

Table 14

Expected Frequencies

Gender	Yes	No	Total(RT)
Male	11.04	11.02	58
Female	34.02	6	42
Total(CT)	81	19	100

Table 15

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	45	46.98	-1.98	3.9204	.08345
	13	11.02	1.98	3.9204	.35575
	36	34.02	1.98	3.9204	.11523
	6	7.98	-1.98	3.9204	.49128
Total(GT)					
					∑1.04571

Once again, for nominal data χ^2 Tab was used to know the relationship between gender and training for time duration with 0.05 level of significance. Tab χ^2 tab for 1 degree of freedom was 3.84 against Cal χ^2 Tab value 1.04571. As could be seen that Cal χ^2 Tab is less than the Tab χ^2 tab so null hypothesis H_4 is accepted.

H_5: Officer and non-officer have same opinion about Behavior of the staff.

Table 16

Contingency Table: Observed Frequencies

Status	Yes	No	Total(RT)
Officer	36	9	45
Non Officer	46	9	55
Total(CT)	82	18	100

Table 17

Expected Frequencies

Status	Yes	No	Total(RT)
Officer	36.9	8.1	45
Non Officer	45.1	9.9	55
Total(CT)	82	18	100

Table 18

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	36	36.9	- 0.9	0.81	0.02195
	9	8.1	0.9	0.81	0.1
	46	45.1	0.9	0.81	0.01796
	9	9.9	-0.9	0.81	0.08182
Total(GT)					
					∑0.22173

The χ^2 test was run to investigate the relationship between statuses with staff behavior at 0.05 level of significance since data was nominal. We could see tab χ^2 Tab value for 1 degree of freedom is 3.84 while Cal χ^2 cab value is zero. 22173. As Cal χ^2 tab is less than the Tab χ^2 tab hence null hypothesis H_5 is substantiated and accepted.

H_6: There is no significant mean difference between in the opinion of officer and non-officer for the equipment.

Table 19

Contingency Table: Observed Frequencies

Status	Yes	No	Total(RT)
Officer	39	6	45
Non Officer	46	9	55
Total(CT)	85	15	100

Table 20

Expected Frequencies

Status	Yes	No	Total(RT)
Officer	38.25	6.75	45
Non Officer	46.75	8.25	55
Total(CT)	85	15	100

Table 21

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	39	38.25	0.75	0.5625	0.01470
	6	6.75	-0.75	0.5625	0.08333
	46	46.75	-0.75	0.5625	0.012033
	15	8.25	0.75	0.5625	0.068182
Total(GT)					
					∑0.178333

Since data was nominal, χ^2 was employed to investigate the relationship between status and attitude of officers and non-officers towards utilization of equipment. The level of significance was kept at 0.05, Tab χ^2 with for 1 degree of freedom was 3.84 and Cal χ^2 was 0.17833.Therefore, we accepted the null hypothesis H_6.

H_7: officer and non-officer behave in similar manner about the laboratory tests.

Table 22

Contingency Table: Observed Frequencies

Status	Yes	No	Total(RT)
Officer	33	12	45
Non Officer	44	11	55
Total(CT)	77	23	100

Table 22

Expected Frequencies

Status	Yes	No	Total(RT)
Officer	34.65	10.35	45
Non Officer	42.35	12.65	55
Total(CT)	77	23	100

Table 23

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	33	34.65	-1.65	2.7225	0.07857
	12	10.35	1.65	2.7225	0.26304
	44	42.35	1.65	2.7225	0.06428
	11	12.65	-1.65	2.7225	0.21521
Total(GT)					
					∑0.6211

The χ^2 test was used to check the correlation between the status of officers and non-officers regarding their attitude towards the lab results. The level of significance was kept at 0.05, Tab χ^2 value at 1 degree of freedom was 3.84, where Cal Tab χ^2 was computed, and it was 0.6211. As the Cal χ^2 value is less than Tab χ^2 value, therefore, null hypothesis is accepted.

H_8: Officer and non-officer have similar views about the time duration for test results.

Table 24

Contingency Table: Observed Frequencies

Status	Yes	No	Total(RT)
Officer	34	11	45
Non Officer	47	8	55
Total(CT)	81	19	100

Table 25

Expected Frequencies

Status	Yes	No	Total(RT)
Officer	36.45	8.55	45
Non Officer	44.55	10.45	55
Total(CT)	81	19	100

Table 26

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	34	36.45	-2.45	6.0025	0.16467
	11	8.55	2.45	6.0025	0.70204
	47	44.55	2.45	6.0025	0.13473
	8	10.45	-2.45	6.0025	0.57440
Total(GT)					
					∑1.57584

The χ^2 test was employed to check the significant mean difference for normal data based on domicile and attitude towards staff training. Using 0.05 confidence level, χ^2 Tab with 1 degree of freedom was 3.84, while Can χ^2 value was recorded as 1.57584, hence null hypothesis H_7 is accepted.

H_9: There is no difference between the views of civilians and non-civilians about the behavior of the staff.

Table 27

Contingency Table: Observed Frequencies

Category	Yes	No	Total(RT)
Civilians	31	08	39
Non-Civilians	51	10	61
TOTAL(CT)	82	18	100

Table 28

Expected Frequencies

Category	Yes	No	Total(RT)
Civilians	31.98	7.02	39
Non-Civilians	50.02	10.98	61
Total(CT)	82	18	100

Table 29

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	31	31.98	-0.98	0.9604	0.030031
	8	7.02	0.98	0.9604	0.136809
	51	50.02	0.98	0.9604	0.0192003
	10	10.98	-0.98	0.9604	0.087468
Total(GT)					**∑0.2735083**

Once again χ^2 test was used to check relationship between expertise of doctors i.e., specialist and non-specialist and their attitudes toward staff. The Tab χ^2 for 1 degree of freedom is 3.84 and Cal χ^2 was 0.2735083. It could be find from the results that Cal χ^2 value is less than the Tab χ^2 value, thus we accept the null hypothesis H_9.

H_{10}: Civilians and non-civilians have same opinion about the laboratory equipment.

Table 30

Contingency Table: Observed Frequencies

Category	Yes	No	Total(RT)
Civilian	34	5	39
Non-Civilian	51	10	61
Total(CT)	85	15	100

Table 31

Expected Frequencies

Category	Yes	No	Total(RT)
Civilian	33.15	5.85	39
Non-Civilian	51.85	9.15	61
Total(CT)	85	15	100

Table 32

Chi-Square Test- Statistics

	Fo	Fe	(Fo-Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	34	33.15	0.85	0.7225	0.021794
	5	5.85	-0.85	0.7225	0.123504
	51	51.85	-0.85	0.7225	0.013934
	10	9.15	0.85	0.7225	0.789617
Total(GT)					
					∑0.2381937

Since we have nominal variables to test this hypothesis, therefore χ^2 was suitable to investigate the relationship between category i.e., civilian and non-civilian for attitude towards equipment. Tab value of χ^2 for 1 degree of freedom is 3.84, and Cal value of χ^2 was 0.2381937, therefore, based on the criteria for judgement, we accept the null hypothesis H_{10}.

H_{11}: Civilians and non-civilians behave in similar manner about the laboratory tests.

Table 33

Contingency Table: Observed Frequencies

Category	Yes	No	Total(RT)
Civilian	27	12	39
Non-Civilian	50	11	61
Total(CT)	77	23	100

Table 34

Expected Frequencies

Category	Yes	No	Total(RT)
Specialist	30.03	8.97	39
Non-Specialist	46.97	14.03	61
Total(CT)	77	23	100

Table 35

Chi-Square Test- Statistics

	Fo	Fe	(Fo -Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	27	30.03	-3.03	9.1809	0.305724
	12	8.97	3.03	9.1809	1.023511
	50	46.97	3.03	9.1809	0.195463
	11	14.03	-3.03	9.1809	0.654376
Total(GT)					
					∑2.179074

To check relationship between the Category (Civilian and Non- Civilian) and their attitude towards results χ^2 was used at 0.05 level of significance, which yielded Cal χ2, 2.179074 value against the 2.179074 Tab value 3.84. The calculated value of x2 is. Since the calculated value is less than the tabulated value, so null hypothesis H_{11} was accepted.
H_{12}: Civilians and non-civilians have same views about the time duration are for test results.

Table 36

Contingency Table: Observed Frequencies

Category	Yes	No	Total(RT)
Civilian	31	8	39
Non-Civilian	50	11	61
Total(CT)	81	19	100

Table 37

Expected Frequencies

Category	Yes	No	Total(RT)
Civilian	31.59	7.41	39
Non-Civilian	49.41	11.59	61
Total(CT)	81	19	100

Table 38

Chi-Square Test- Statistics

	Fo	Fe	(Fo -Fe)	(Fo-Fe)2	(Fo-Fe)2/Fe
	31	31.59	-0.59	0.3481	0.011019
	8	7.41	0.59	0.3481	0.046977
	50	49.41	0.59	0.3481	0.007051
	11	11.59	-0.59	0.3481	0.0300345
Total(GT)					**∑0.09507**

For nominal variables, the study used $\chi 2$ test at 0.05 level of significance and 1 degree of freedom. To check relationship between the Category (Civilian and Non- Civilian) and their attitude towards time Duration with Tab χ^2 value 3.84 the study suggested acceptance of Null hypothesis H_{12} against the Cal χ^2 value of 0.09507.

Discussion and Conclusion

This study was undertaken with the aim to measure the attitude of patients for the CMH Dera Ismail Khan's laboratory services. Study was quantitative, so primary data was gathered through a structured questionnaire for variables of the study i.e., behavior of staff, equipment, results authenticity and time taken for competition of the investigation process in the medial labs. The study revealed no significant difference between the responses of males and females against the staff behavior and equipment used in the laboratory. Likewise, Chi-square results also did not show any significant difference between the responses of males and females for the results authenticity. The findings further reports non-significant results in the opinion between male and female for time duration, same was reported for officers and non-officers regarding staff behavior of staff. This result also explains insignificant significant difference between opinion of officers and non-officers for laboratory equipment as well for the difference between the opinions of officers and non-officers against results authenticity. Similar results were reported for difference of opinion between officers and non-officers against time duration spent in the laboratory for investigation process. Further, results also bring into fore that, there is no difference in opinion of civilians and non-civilians for the laboratory staff behavior of staff. It was further reported that no significant relations exist in the responses of civilians and non-civilians for laboratory equipment as well as civilians and non-civilians for the results. Same results were reflected for the responses of civilians and non-civilians against the time used for investigation completion process at CMH Dera Ismail Khan.

The χ^2 test is most suitable to test the normal variables like used in this study to measure the impacts of the demographic on the research variables. To accomplish the objectives of the study, we have proposed twelve hypotheses. The results demonstrated no significant differences between the responses of males & females, officers and non-officers &

civilians and non-civilians about the behavior of staff, equipment, results, and time duration. Further, it is projected from the contingency tables that males & females, officers & non-officers, and civilians & non-civilians have positives views about the behavior of the lab staff, availability and condition of the lab equipment, authenticity of tests results and time taken by laboratory for sampling and processing. Hospital authorities must concentrate further on cleanliness of wards and rooms. To enhance further the knowledge and skills of the nursing staff, refresher courses must be arranged by the authorities. The nursing staff must treat all the civilians or non-civilian, officers and non-officers equally.

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