The Impact of Enhancing Performance of Autopsy on the Turnaround Time of Autopsy Reporting In Libya

أثر أداء تشريح الجثث فى الفترة الزمنية للتقرير الشرعي فى ليبيا

Prepared by

Magde Boukhatwa

Supervised by

Dr. Mohammad AL-Adaileh

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Faculty of Business Administration
Middle East University

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AUTHORIZATION

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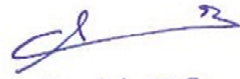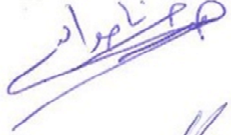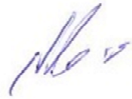
Name: Magde Boukhatwa

Date:16 /1 /2018

Signature:

Committee Discussion and Decision

This Thesis of the student Magde Boukhatwa which studied (**The Impact Of enhancing Performance of Autopsy on The Turnaround Time of Autopsy Reporting in Libya**) was successfully Defended and Approved on 16 / 1 / 2018.

Name	Title	University	Signature
Dr. Adel O.Al-Hashim	External examiner	Al-Balqa university	
Dr. Hebah H. O. Nasereddin	Chief &Internal examiner	MEU	
Dr. Mohammad AL-Adaileh	Supervisor	MEU	

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Researcher

Magde Boukhatwa

Dedication

This work is dedicated to my parents who are the shining light of my life to the spirit of my father who has always inspired me and been proud of me in every step of my life regardless of any shortcomings. My mother, who entire world revolves around her. I would also like to dedicate this thesis to my amazing wife, whose sacrificial care for me and our children. No words can make me express my gratitude and thanks, to each of the above, I extend my deepest appreciation.

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Researcher

Magde Boukhatwa

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The Impact Of Enhancing Performance Of Autopsy on The Turnaround Time Of Autopsy Reporting In Libya

Prepared by

Magde boukhatwa

Supervised by

Dr. Mohammad AL- Adaileh

Abstract

The judicial experience and research center has duties to assess and develop the practice process for time reporting and enhancing performing autopsy in Libya. By increasing the efficiency of autopsy reporting, which enhancing the time for delivery of reports, minimizing error and reports to carry more weight in court. At the center level of forensic staff, the researcher studied the variables to analysis delays in reporting. The current study seeks to identify the impact of enhancing autopsy performance on reporting in forensic medicine, through Providing conceptual and intellectual framework for basic study(impact of enhancing autopsy performance).Describing the level of decreasing the turnaround time of reporting in The Judicial Experience and Research Center Libya. Identify the direct impact of autopsy performance on reporting. This study used the quantitative method by collecting data via questionnaire for the sample that size 158, which were distributed among the forensic staff of judicial experience and research center. In addition, the researcher has investigated the data collected by using statistical package for social sciences (SPSS). The result indicates that forensic staff working at the Judicial Experience and Research Center Libya recognize the high importance of the enhancing of the performance of autopsy reporting. A result of all the descriptive analysis of the variables is high, which indicate that there is the direct impact of the Enhancing Performance of Autopsy on a Turnaround Time of Autopsy Reporting. The outcome shows that there is an approval among participants on high enforcement of each Enhancing autopsy performance for reporting which indicates that there is an agreement on the high presence of these variables in The Judicial Experience and Research Center Libya.

Keywords: Enhancing performance, turnaround time judicial experience and research center.

أثر أداء تشريح الجثث فى الفترة الزمنية للتقرير الشرعي فى ليبيا

إعداد

مجدى أبو خطوة

إشراف الدكتور

محمد العضايلة

الملخص

يتولى مركز الخبرة القضائية والبحوث واجبات تقييم وتطوير عملية الممارسة من أجل الوقت اللازم لكتابة التقارير وتعزيز تشريح الحالات الجنائية في ليبيا. وفي التشريح ألشرعي , فإن نظام الإدارة مهم للخدمات التي تقدمها مراكز الطب الشرعي. من خلال زيادة كفاءة عمليات التشريح , مما يعزز الوقت لتقديم التقارير , والتقليل من الخطأ في تلك التقارير.و الباحث هنا درس المتغيرات التى تسبب التأخير في إعداد التقارير,وتتضمن الدراسة الحالية إلى التعرف على تأثير تعزيز تشريح الجثث فى اعداد التقارير وتأثير تعزيز تشريح الجثث على الأداء من خلال : توفير الإطار الفكري للدراسة الأساسية (تأثير تعزيز تشريح الجثة) . من خلال وصف مستوى تقليص الفترة الزمنية للتقارير في مركز الخبرة القضائية والبحوث في ليبيا كذالك تحديد الأثر المباشر لأداء التشريح على التقارير .وقد استخدمت هذه الدراسة الطريقة الكمية من خلال جمع البيانات عن طريق الاستبانة للعينة التي بلغ حجمها 158 , والتي تم توزيعها على العاملين في الطب الشرعي فى مركز الخبرة القضائية و البحوث. بالإضافة إلى ذلك , قام الباحث باستخدام الحزمة الإحصائية للعلوم الاجتماعية (سبس) وتشير النتيجة إلى أن موظفي الطب الشرعي العاملين في مركز الخبرة القضائية والبحوث في ليبيا يؤكدون الأهمية الكبيرة لتعزيز الأداء فى كتابة التقارير . وكانت نتائج التحليل الوصفي للمتغيرات مرتفعة ,مما يشير إلى وجود تأثير مباشر للمتغير المستقل على المتغير التابع. أظهرت النتائج أن هناك موافقة بين المشاركين على التنفيذ العالي لكل من تعزيز أداء تشريح الجثث وكتابة ألتقارير مما يشير إلى اهمية استخدام هذه المتغيرات بشكل كبير في مركز الخبرة القضائية والبحوث فى ليبيا .

الكلمات المفتاحية : تعزيز الأداء , وقت الاستكمال ,والخبرة القضائية ومركز البحوث.

CHAPTER ONE

INTRODUCTION OF STUDY

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CHAPTER ONE

INTRODUCTION OF STUDY

1.1. Introduction

The judicial experience and research center has duties to assess and develop the practice process for time reporting and enhancing performing autopsy in Libya .In forensic autopsy ,the management system is important for services provided by the forensic centers. By increasing the efficiency of autopsy reporting , which enhancing the time for delivery of reports , minimizing error and reports to carry more weight in court . At the center level of forensic staff we go to study the variable to analysis delays in reporting and knowing the organizational learning.

Jimmerson et al, (2005). Said that the Toyota Production System, based on policies of modifications , is used to gain waste reduction and ability while increasing product quality. Several start means and principles, appropriate to health care, have proved useful in improving heart operations. Toyota's production practice has preserved the company to become the accepted industry master in product quality and profitability. As suggested before , that forensic center can learn about understanding and be improving work processes from this best-in-class center. To administer with autopsy review and writing, newly, criminological organizations have responded by using Toyota Production System, the method to help explain their process-related difficulties.

The criticism is to survive the growing organizational understanding of healthcare operations development and ensure that future healthcare providers was have the capabilities and skills needed to use an industrial design approach to explain and expand healthcare delivery. Mazur, et al. (2008).

Mell, et al. (2013). Found that selection of Toyota production policy supervision approaches can rapidly improve market processes. Achieving programs that increase effectiveness in giving health care without increasing expenses was more predominant as health care dollars become more excellent.

For decades, the forensic ability systems have produced valuable ammunition that has contributed to the successful completion and conviction of criminals as well as to the release of innocent people (National Research Council, 2009).

World Health Organization, (2011). Laboratory quality can be defined as exactness, reliability and timeliness of reported test results. The lab results must be as accurate as possible, all features of the laboratory operations must be strong, and reporting must be timely in rank to be useful in a clinical or public health framework.

A forensic autopsy must be directed by an authorized staff who is a forensic staff or in-training (resident/fellow). Duty for forensic autopsy quality must hold with the forensic staff, who must directly manage support other staff. Allowing non-forensic staff to conduct forensic autopsy methods without direct supervision and supervision is fraught with the potential for serious errors and lacks (Peterson, et al. 2006).

Forensic examinations are managed to obtain knowledge which may conclusively be used in evidence in court steps. In obtaining permission, the staff must make this clear to the examinee. The idea of the test must be understood and consent freely given and the test must be aware that there is no responsibility to give this consent (Sarkar& Stark 2010).

Pinheiro (2006) ,stated the future were be posted with education, legislation, and organization, a fore boding triangle the author thinks more important support to face the objection of the forensic team in the complicated and difficult days ahead .Siebert (2009),said that the suspension of autopsy reports can, however, be harmful in a number of ways. Staff may not receive postmortem findings in a timely manner; families, waiting for events, may feel heightened anxiety; guidelines mandated by accrediting offices. Stoppages in the process are also ineffective for the staff. Clinical records, reviewed at the time of the whole examination, may need to have stayed days or weeks later at sign-out; gross and tiny findings may also need to be evaluated more than once. Such methods are damaging when they need to be reworked.

Bove & Iery (2002) Prolonged reporting or trouble of autopsy findings that are probably misleading to a colleague is pointless. The courts held in several cases that the opening point of the statute of limitations begins when the autopsy report is received or discovered. College of American Pathologists defining competency; Implements best practices in review of the autopsy; these best practices include: obtaining permission for the autopsy and accurate referral of forensic staff analyst cases, participation where proper in death certification/defining cause of death, sufficient and safe performance of external and internal autopsy inquest, recognition of patient clinical history, gross and microscopic findings as well as utilization of special techniques, and proper reporting and communication to maximize educational value and enrichment to quality assurance and future patient care.

Giannelli (2007), Found that the kind of forensic practice in most systems varies greatly because of the lack of sufficient training and continuing education, definite mandatory certification and accreditation programs , adherence to strong performance standards, and efficient monitoring. The purposes of the medico-legal necropsy are multiple, unlike clinical autopsy. Hence an ML autopsy needs to be done more correctly, the findings explained more critically and opinion selected carefully. (Kotabagi et al, 2005)

Marinescu & Rogozea (2014). Several staffs are not very usual with autopsies and are not really knowledgeable of its benefits for the grieving families, for the now and later patients and for medicinal practice Zarbo, et al. (1999).Found, the results show

That well-organized recording and specific examination of clinical questions obtained prior to starting the autopsy can consistently give important information for quality enhancement purposes. Most of this awareness would not be available from any other source. Džinić (2015), Noticed that, there is a notable positive correlation (p<0.01) between administrative direction way and each level of organizational learning in elected administrative groups. It means there is a positive correlation between autocratic/transactional administrative leadership style and lower movement towards organizational learning as well as between participatory/transformational administrative leadership style and greater the flow towards organizational learning. The aim of this study is to illustrate the overall perception of turnaround time of autopsy reporting among forensic staff in The Judicial Experience and Research Center Libya as well as to identify the common strength and areas of weakness in autopsy reporting.

1.2. Problem Statement

The Judicial Experience and Research Center in Libya is the organization responsible for the medico -legal reporting to legal system about the cause of death, and provide final autopsy report to the court of law ,there is a delayed process to reach the autopsy report to the court by many reasons from increase turnaround time of autopsy report , by this study the researcher focus to resolving the causes which effect all the variable of the study from variable affect the enhancing of autopsy performance to turnaround time of reducing the time required for obtaining the report by the court .Many researches indicated that the necessity of performance to improve the time turnaround time for the autopsy reporting ,to improve the process of autopsy reporting by enhancing autopsy performance ,there is a gap between performance and

reporting. To study the institutions or center responsible medico-legal death to see the causes of delays of reporting to provide national program for autopsy reporting.

By decreasing the time to finish the report , the writing process in the center meet the national standards , that lead to increase efficiency of autopsy reporting which benefit the forensic staff . These process must be used with other autopsy services which have prolonged reporting times. (Siebert, 2009).

Stephen, et al. (2016), demonstrated that, a strong death investigation system is essential to a properly working justice system, which in turn underpins a safe and good society. In the field of forensic medicine, the previous study and reviews of literature for specialty of forensic autopsies.

Khoury,et al .(1999), Said that, to be efficient , verbal autopsy should meet the following requirements: proper instrument design , intensive training, supervision and retraining of those in charge of filling out the application, certainty that respondents understand all questions and that their answers are adequate, and determination of cause of death by at least two staff.

Forensic services are provided through the Judicial Experience and Research Center and the various ministry of health forensic centers in the governorates. It is worth mentioning that legislations, information systems, and computerization need to be developed for these services to allow their analysis and use in decision-making of the National Strategy for The Judicial Experience and Research Center Libya.

1.3. Study objectives

The current study seeks to identify the impact of enhancing autopsy performance on autopsy reporting in forensic medicine, through:

1. Providing conceptual framework for basic study (impact of enhancing autopsy performance).

2. Describing the level of decreasing the turnaround time of autopsy reporting in The Judicial Experience and Research Center Libya.
3. Identify the impact of autopsy performance on autopsy reporting.

1.4. Study Importance

Its focus on The Judicial Experience and Research Center Libya and their environment, where it analyze the variables, which have impact on the autopsy reporting ,as well as it is to reach an advantage for the researchers in the area of autopsy reporting ,minimizing error, ensuring timely delivery of reports ,and monitoring staff competence. This study were give a general review about variables (enhancing autopsy performance and turnaround time) and their impact. In addition, this results could be generalized over other National center for forensic medicine at other Arabic country, since other centers are affected by these elements of performance.

Finally ,the results from this study were benefit The Judicial Experience and Research Center Libya concerning how to deal with enhancing autopsy performance system and take benefit of having an increasing the efficiency of autopsy reporting and handle them correctly which lead to a successfully improving a forensic center.

1.5. Study questions and Hypothesis

Study question

Based on the above the main problem were determined by the following questions:

First main question

1. What is the practices level of the enhancing performance of autopsy on the turnaround time of autopsy?

Second main question:

(For forensic staff)

2. Is there an impact of enhance autopsy performance of reporting on turnaround time of autopsy reporting?

2.1 Is there an impact of enhance autopsy performance of reporting on delays in obtaining autopsy permit?

2.2 Is there an impact of enhance autopsy performance of reporting on using academic approach to autopsy report?

1.6. Study Hypothesis

$H0_1$: There is no significant impact of enhance autopsy performance on the turnaround time of autopsy reporting at ($\alpha \leq 0.05$).

$H0_{1.1}$: There is no significant impact of administrative director on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

$H0_{1.2}$: There is no significant impact of administrative director on using academic approach to autopsy report at ($\alpha \leq 0.05$).

$H0_{1.3}$: There is no significant impact of forensic staff responsibility on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

$HO_{1.4}$: There is no significant impact of Forensic staff responsibility on using Academic approach to autopsy report at ($\alpha \leq 0.05$).

$HO_{1.5}$: There is no significant impact of final autopsy report on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

$HO_{1.6}$: There is no significant impact of final autopsy report on using academic approach to autopsy report at ($\alpha \leq 0.05$).

1.7. Study Model

The model below shows the study's variables, where the Autopsy performance was an independent variable and the turnaround time of autopsy reporting was dependent variable.
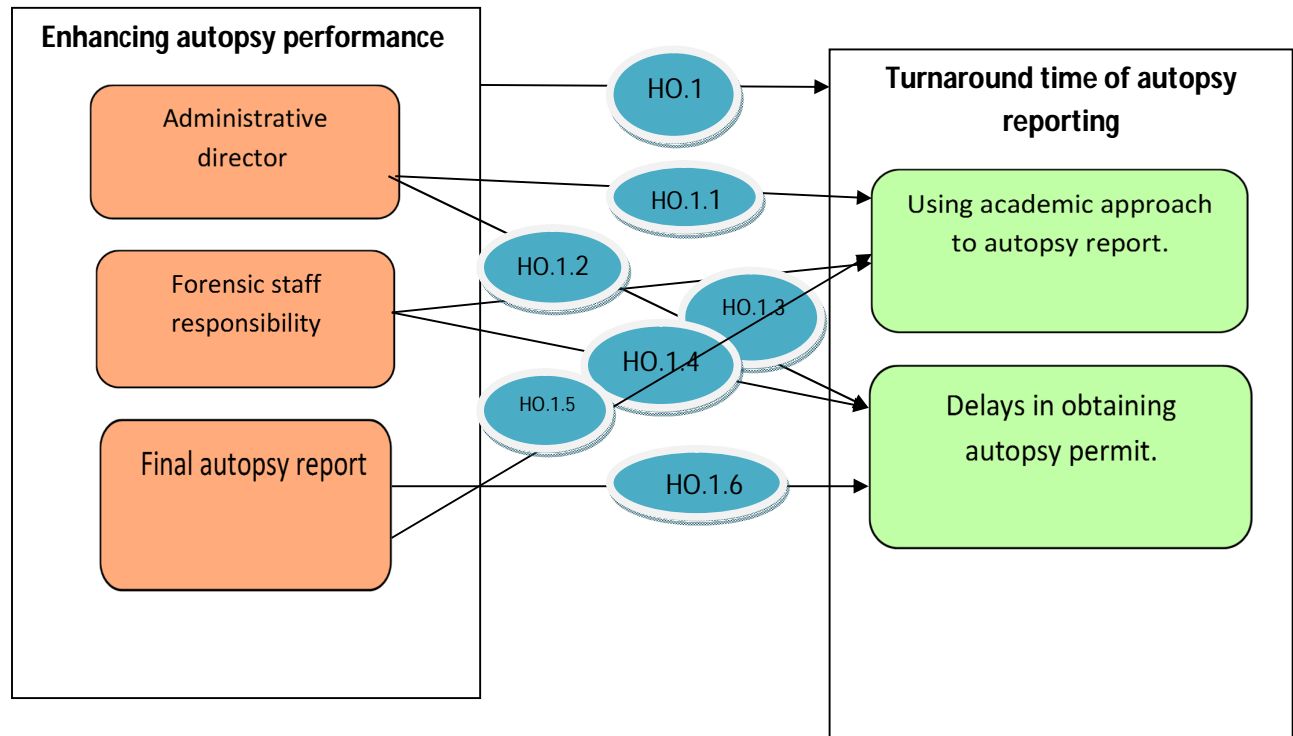
Figure (1.1) Study model

Source: Prepared by researcher based on:

Independent: Adickes, & Sims. (1996).

Dependent: Siebert, (2009).

1.8. Study Limitations

Human Limitation: This study were carried on forensic staff working at The Judicial Experience and Research Center in Libya.

Place Limitation: This study were carried on The Judicial Experience and Research Center in Libya.

Time Limitation: This study were carried out within the period between 1st
Semester and 2nd semester of academic year 2017/2015.

1.9. Study Delimitation

The use of Judicial Experience and Research Center in Libya limits its generalizability to other centers in other Arabic countries; therefore, generalizing results may be questionable. Extending the analyses to other centers and countries represent future research opportunities, which can be done by further testing with larger
Samples within same center, and including other centers was help mitigate the issue of generalizing conclusions on other centers.
Limitations to data access refer to the fact that data gathering through the questionnaires and annual reports is controlled to the period of these questionnaires, which may limit the quality and quantity of the data collected. And lack of similar studies in Libya and other Arab countries.

1.10. Scientific Limitations

In this study, the relation between different variables was analyzed. The first variable was autopsy performance and reporting divided into three sub variables (Administrative director, Forensic staff responsibility and final autopsy report; based on Adickes, & Sims, (1996). Siebert, (2009) divided the turnaround time of autopsy reporting into two sub variables (using academic approach to autopsy reporting and Delays in obtaining autopsy permit).

1.11. Conceptual Definitions

Autopsy Performance with their sub variables are adapted by as following:

Enhancing Autopsy Performance: Peter, et al (2006) Defined Performance of a forensic autopsy is the practice of medicine. Forensic autopsy performance includes the discretion to determine the need for additional dissection and laboratory tests.

Administrative director of forensic staff: It means the certain establishment of the present discovery give a structure and method for updated, real-time test scheduling, management, processing and reporting. (Adickes & Sims, 1996)

Forensic staff responsibility, Cosbey & Paterson (2017).Define the staff responsibility groups are organized too, which its members refer for allowing matters, professional advice and direction, recognized associations exist as a collective group ready to set standards for practice and support high standards of professionalism among its segment.

Final autopsy report; the report which is written, submitted for the event and disseminated within 24 hours and signed then sent to court .(Adickes & Sims, 1996).

The turnaround time reporting adapted by Siebert, J. R. (2009) as following

1- **Using academic approach to autopsy report, with extensive research and discussion of findings**

Anderson (1990).The autopsy has been of great interest in educating students regarding medical difficulty. The marked drop in the use of the autopsy in medical training and continuing education has added significantly to the current discomfort among physicians regarding medical uncertainty and medical errors, which, in turn, has elevated the decline of the autopsy. Excessive error, denial, and other preventive actions that many physicians marshal in response to doubt and error prevent these individuals from learning from their mistakes.

2- Delays in obtaining autopsy permit

Sanchez, and Kim (2016), have given a difference of convincing reasons for this drop in autopsy rates, but it is self-evident that the number of examinations cannot grow unless the number of requests for autopsies does. Several investigations have shown that, if asked for approval, about one-third of families agree, another one third flatly refuse, and the waiting one-third refuse initially but agree after their questions about the procedure are answered. If this inclination is to be reversed, the obvious place to start is with the house crew who actually request permission for autopsies. If we are going to delegate this difficult task to our physicians-in-training then we must assure them that we support them. One of the most important predictors of a resident's compliance to request permission for an autopsy in one study was the view that the attending staff was genuinely engaged in the necropsy and the dissection rate.

Operational definition

Autopsy performance: A forensic autopsy must be conducted by an approved physician who is a forensic pathologist or by a practitioner who is a forensic pathologist-in-training (resident/fellow). The path to family, obtaining; meaning of "permission" is happening used for the term is vague. Under one definition it simply means agreement, approval, or permission. It is reasonably clear (though here un argued) that this meaning of consent is not appropriate to medical interventions, whether these are examinations, practices, or research. For medical interruptions, it is broadly allowed that consent means a freely.

Turnaround time of autopsy reporting:

Using academic approach to autopsy report, with extensive research and discussion of findings.

Delays in obtaining autopsy permit, clinical history, or other documentation.

Chapter Two

THEORETICAL FRAMEWORK AND PREVIOUS STUDIES

2.1. Theoretical Framework and Previous studies

This chapter was include the theoretical framework that related to the impact autopsy performance on the autopsy turnaround time reporting, studies variables: also it contains characterization of the previous studies which in connection to this study and the following is an introduction to that:

Autopsy performance

Description: According to Adickes &Sims (1996), to develop a system for the review and writing of autopsy in an efficient and helpful manner. The goal in developing a method to death post-mortem reporting time was to improve the reports gain to less time is used on preparing for the autopsy, outline review, clinical interview, determining and giving histological division, or sign-out

Peterson &Clark (2015), define enforcement of a forensic autopsy is the practice of medicine. Forensic autopsy performance includes the discretion to determine the need for additional dissection and laboratory tests.

These elements play an important function in the medico –legal autopsy to establish a cause of death, to assist the police investigation. By implementing performance for both small and large forensic center which lead to improving a forensic center reporting. Lastly, in this study the dimension of performance enhancing system

can be defined as a typical monitoring and evaluation tools used to ensure the forensic quality of reporting.

Dimensions of Enhancing autopsy performance

Access to family, taking; meaning of "consent" is being used for the term is vague. Under one definition it simply means agreement, permission, or consent. It is fairly obvious (though here un argued) that this meaning of consent is not relevant to medical interferences, whether these are investigations, treatments, or research. For medical interventions it is widely accepted that consent means a voluntary, uncorrected decision, made by a sufficiently sufficient or autonomous person on the basis of adequate information and discussion, to accept rather than reject some proposed course of action that was affect him or her. (Gillon, 1985).

Administrative director of pathologist :It mean certain embodiments of the present invention provide a system and method for improved, real-time test scheduling, administration, processing and reporting Provisional autopsy diagnosis; report is written ,submitted for transaction and disseminated within 24 hours.(Adickes & Sims,1996).

According to Bontis et al (1999), human capital or human resources represent the combined intelligence, skills and expertise that give the organization its distinctive character (and basis for competitive advantage).

National Institute of Standards and Technology (1999), stated that training for the forensic community, as in other professions, is an ongoing need. Training of novices and providing continuing education for seasoned professionals are essential to ensure that crime laboratories deliver the best possible service to the criminal justice system.

National Pathology Accreditation Advisor council (2013).Many of the Standards and Commentaries relate to the design, construction and provision of services, e.g. water supply, storage and electricity, and it is strongly advised that they are implemented where new mortuaries are being designed as they represent best practice. These Requirements are intended to serve as minimum Standards in the accreditation process and have been developed with reference to current and proposed Australian regulations and other standards from the International Organization for Standardization. In order to decrease pre analytical errors a regular feedback system from pathologist, technologist and personnel outside the laboratory should also be adopted.

Zarbo et al (2006),found that majority of defects occurred in the pre-analytic and post-analytic phases of testing, rather than within the laboratory (the analytic aspect of testing).This impression we now recognize, was an artifact of the tools and measures employed in those multi-institutional studies.

Ong & Milne (2009), the American Society of Clinical pathologists and Clinical Association of Pathologists in United States provide quality assurance programmers tailored specifically for forensic pathology .The individual pathologist is also encouraged to participate in local continuing professional development programmers.

When autopsy reports are delayed, clinicians and families do not receive information in a timely fashion—Using lean principles derived from the Toyota Production System, we set out to streamline our autopsy reporting process.(Siebert,2009)

Streamlining the reporting carries many benefits. Numerous studies have demonstrated that inadequate communication between pathologists and clinical

colleagues, including delayed autopsy reporting, accounts for dissatisfaction and may be related to the decline in autopsy rates. Delays in workups occur for a number of reasons and in certain instances may be unavoidable. However, when cases are tracked systematically, work flow is continuous. Delays can be identified in a timely manner and attempts made to reduce them. By being current on the progress of each case, pathologists are able to respond more easily to the queries of clinicians and families. (Siebert, 2009).

Turnaround times for autopsy recording are important indicators of the overall function and quality of the autopsy service, and demonstration of key performance Symbols to better service its clients approached its key stakeholders to know their requirements and established key turnaround time for services committed to service level agreements. (Centre for Forensic Medicine, 2001).

Comfort surveys are useful for many reasons. In clinical practice, the studies provide a device to discover and know perceptions about expectation and comfort with the autopsy service. They are particularly important because of the occasional nature of the autopsy. General surveys should only be performed annually or every other year. However, a survey could be conducted on a continuing basis after the completion of every autopsy. Clinician surveys should be different from surveys of families. (Elizabeth et al, 2016).

Previous study:

1-Steindel & Novis, (1999). **Study entitled: Using outlier events to monitor test turnaround .Using Outlier Events to Monitor Test Turnaround Time,** the aim of this study was to determine the causes of excessive test turnaround time and to identify methods of improvement by studying reasons for those tests reported in excess of 70 minutes from the time the test was ordered Self-directed data-gathering of stat outlier TAT events from intensive care units and emergency departments, with descriptive parameters associated with each event and additional descriptive parameters associated with the participant. Laboratories enrolled in the 1996 College of American Pathologists program. Main Outcome Components associated with outlier TAT events and outlier TAT rates.

This study concluded that, outlier analysis yields new information, such as type of test and reason for delay, concerning test delays when compared with TAT determination alone. Laboratories experiencing stat test TAT problems should use this tool as an adjunct to routine TAT monitoring for identifying unique causes of delay.

2-Pritt, et al (2005) study entitled**: Death Certification Errors at an Academic Institution,** study aim was to determine the frequency and type of errors by non-pathologist physicians at a university-affiliated medical center. Conclusion of this study, demonstrated that, rate of major (grade IV) death certification errors at this academic setting is high and is consistent with major error rates reported by other academic institutions. They attribute errors to house staff inexperience, fatigue, time constraints, and unfamiliarity with the deceased, and perceived lack of importance of the death certificate. To counter these factors, we recommend a multifaceted approach, including an annual course in death certification and discussion of the death certificate for each deceased patient during physician rounds. These measures should result in increased accuracy of this important document

2-Nemetz, et al. (2006), study entitled: **Attitudes toward the autopsy–An 8-state survey,** Research named the answer rate was 43% and the median dissection rate was

2.4% (mean 6.1%). Larger clinics were associated with higher autopsy rates than smaller clinics (9.6% v s 4.0%), and teaching hospitals had a significantly higher autopsy rate than nonteaching institutions (11.4% v s 3.8%). Autopsy rates also changed by type of hospital control, with federal government hospitals having the highest autopsy rate at 15.1%. Sixty-six percent of all respondents accepted that modern autopsy rates were sufficient. Of the respondents, the highest percent (86%) accepted that improved diagnostics contributed to the decline in post-mortems, and the immense percent (78%) agreed that direct payment to pathologists for examinations under the practitioner fee calendar might drive to an increase in autopsies**.**

4-Zarbo, (2006). The study entitled; **"Transforming to a quality culture: the Henry Ford Production System.** In common, physicians are most satisfied with expert diagnostic services and least filled with pathology services related to bad joining. A well-designed and conducted a consumer satisfaction survey is an event for pathologists to periodically educate physician customers about services tried, achieve unreliable expectations, and understand the evolving needs of the physician customer. Armed with current information from practitioner customers, the pathologist is better able to strategically project for resources that promote performance improvements in anatomic pathology laboratory sets that adjust with emerging clinical needs in healthcare delivery.

 5-Siebert (2009) Study entitled: **Increasing the efficiency of autopsy reporting**. An review of autopsy records issued in the 15 months before our performance review showed that the completion rate did not meet standards in all instances, Provisional anatomic diagnoses were issued within 2 days in only 26% of cases; 17% of reports

were completed in 30 days, and 71% in 60 days. Reporting times were highly variable Reports were delayed for a variety of reasons.

6-VikashGaur & Raghav. (2016). Study entitled: **Total Quality Management in Pathological Laboratories: An Overview with Emphasis on Need for Structured National Policy**. The quality system for morbid workrooms must include improvement of accuracy in analytical phase as well as quality support in the reliability of pre-analytical and post-analytical activities. Effective monitoring and feedback control of all possible deficiencies generated by laboratory personnel as well as non-laboratory personnel is the necessary part of the quality construction. In present study authors strongly advises that Pathological laboratories should attempt to produce the high quality result to its customers by using up to date accurately verified methodology using acceptable staff, monitoring method to control inner and outer quality control and support in external quality trust assessment schemes.

7-Cromwell, et al (2017).Study entitled: **Improving Autopsy Report Turnaround Times by Implementing Lean Management Principles.** The current study aimed to improve hospital-consented autopsy reporting times (turnaround time) by using lean principles modified for a healthcare setting, with an aim of signing out 90% of autopsies in 90 days. An audit of current and historical TATs was performed, and a working group incorporating administrative, technical, and professional staff constructed a value stream map documenting the steps involved in constructing an autopsy report. The application of lean principles to autopsy sign-out workflow can significantly improve TATs and reduce variability, without changing staffing levels or significantly altering scheduling structure.

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CHAPTER THREE

METHOD AND PROCEDURES

3.1. Study Design

This study is considered as a causal study, which were use descriptive analytical approach to study the impact of using enhancing autopsy performance and of autopsy reporting in the Judicial Experience and Research Center Libya.

It was start with literature review and expert's interviews to improve the currently used measurement model and to explore using variable .Then a panel of judges were exploded to assure that the items that were included questionnaire were suitable.

3.2. Study Population and Study Sample

Study Population

The field of the current study was in the Judicial Experience and Research Center Libya. The study population Consist of forensic staff in the Judicial Experience and Research Center Libya.

Study Samples:-

Study sample consists of forensic staff (senior, middle and operational), their total number (200) individuals.

3.3. Data Collection Methods (Tools)

Data Collection Methods (Tools)

Data was used to achieve the purposes of the study can be divided into two groups: secondary and primary data. Secondary data was collected from annual reports, journals, books, researches, thesis, dissertations, articles, working papers, and the Worldwide Web. Primary data was collected from expert by survey (questionnaire). The questionnaire was developed in contrast with hypotheses and research model.

Tool of Collecting Primary Data

The fit tool was chosen and tested to measure the current study and to match the study hypothesis and research model. Basically the original questionnaire items were developed relying on previous studies (Independent: Adickes & Sims, (1996) and dependent: Siebert, (2009).

Then, the questionnaire was revised and validated by an academic panel of judges and references.

3.4. The Questionnaire:

Initial items to measure various constructs were depending on prior researches.

Questionnaire Variables

Independent Variable (Enhancing Autopsy performance): through literature review, the researcher has identified three important dimensions that contribute to the Judicial Experience and Research Center Libya. Dependent variable (Turnaround time of reporting): the dependent variable of the study was related to the Judicial Experience and Research Center Libya, and was measured via two dimensions.

All variables was measured by five –point likert –type scale to tap into the staffs perception ,ranging from value 1(**Never**) to value 5 (**Always**) used throughout questionnaire.

Data Collection and Analysis:

Research data have been collected during the time period of November & December at 2017. The targeted the Judicial Experience and Research Center Libya. This research tried to survey the all forensic staff in the center. Questionnaires were handed to 200 forensic staff working in the center. 180 questionnaires were collected. Twenty two questionnaires were ignored due to incomplete statements from respondents. Consequently, the valid questionnaires were 158. So, only 79% of the total unit were analyzed. The SPSS version 16 was used to allocate the impact of enhancing performance of autopsy on the turnaround time of autopsy reporting in Libya.

3.5 Validity Test

Two methods were used to confirm content and construct validity: First, multiple sources of data (literature, expert interviews and panel of judges) was used to develop and refine the model and measures. Then, factor analysis was carried out for all items included in the questionnaire.

Reliability Test: (Cronbach's Alpha): Reliability test (Cronbach's alpha coefficients of internal consistency) was used to test the consistency and suitability of the measuring tools. The reliability was evident by strong Cronbach's alpha coefficients of internal consistency. (Forensic responsibility =0.889)

Table (3.1) Reliability Test:

No	Variables	No. of items	Cronbach's Alpha	Correlation coefficient
A	Administrative director	7	0.815	0.624-.806
B	Forensic staff responsibility	9	0.889	0.572-0.893
C	Final autopsy report .	5	0.758	0.591-0.851
D	Delays in obtaining autopsy permit	5	0.880	0.752-0.953
E	Using academic approach to autopsy report.	8	0.832	0.456-0.832
TOTAL		34	0.946	

The importance is calculated based on the following criteria: 5-1/3 = 1.33.

So low, medium and high degree of presence was considered based on the below:

The Importance of each item was calculated as follows:

(5-1)/3 = 1.33.Three levels of existence was considered according to the following

Intervals:

1. Low degree of existence if the value lies between 1 and 2.33 (1 + 1.33= 2.33).
2. Medium degree of existence if the value lies between 2.34 and 3.66(2.33+ 1.33
   = 2.34-3.67).
3. High degree of existence if the value lies between: 3.67 up to 5.

While the ranking was based on t-value.

3.6 Analysis Methods

The statistical process was carried out on Statistical Package for the Social
Sciences (SPSS) 16 program.

The statistical tools employed would include:

1. Descriptive statistic like means and standard deviations.
2. Histogram: To make sure the data distribution is normal distribution or not.
3. Pearson correlation coefficient: to ensure reliability in terms stability of
   questionnaire.
4. Cronbach's- alpha coefficient: to ensure reliability in terms internal - consistency
   of questionnaire.

CHAPTER FOUR

RESULTS AND HYPOTHESIS TESTING

4.1 INTRODUCTION

4.2 RESPONDENTS DEMOGRAPHIC

4.3 STUDY VARIABLES ANALYSIS

(DESCRIPTIVE ANALYSIS)

4.4 RELATIONSHIP BETWEEN THE STUDY VARIABLE

4.5 TESTING STUDY HYPOTHESIS.

4.1. Introduction

The primary goal of this research was to study the impact of enhancing performance on the turnaround time reporting. In this chapter the results and related analysis were be evinced. In addition, it was focus on the significant results with its statistical indications. First, the study variables were analyzed and described from statistical point of view by using means, standard deviations, t-values, importance. Second, the chapter was represent correlation among independent variables, then their correlation with dependent variables. Finally, study hypothesis was tested by simple regressions.

4.2. Respondents' Demographic Description

Table (4.1) below shows the general characteristics of the respondents in

Terms of gender, age, education, communication, Career's experience, and job position:

1. Gender: Most of the respondents are males with 131 (83.4%) while female rated 27 (16.6%). This indicates that most of forensic staff in Libya are males; due to beliefs and traditions.

2. Age: The highest percentage of the respondents' ages were 25-less than 35years. (60.5%), then less than 25years (31.2), then ages 35-less than 45 (5.1%) and ages above 45 (3.2%). This indicates that the average of the ages of forensic staff are between 25 – 35.

Table (4.1): Demographic Analysis

Variable	Level / category	Number	percentage %
Gender	Male	131	83.4
	Female	27	16.6
Age	Less than 25 years	49	31.2
	25-less than 35years.	95	60.5
	35-less than 45 years	8	5.1
	45 years & more	6	3.2
Educational Qualification	Diploma	87	55.4
	Bachelor's degree	58	36.9
	Master degree	9	5.7
	Doctoral degree	4	1.9
Commnication	Direct	155	98.7
	Indirect	3	1.3
Career's experience	1–5 years	47	29.9
	6-10 years	96	61.1
	11-15 years	7	4.5
	60-20 years	7	4.5
	More than 20 years	1	.6
Job position	Senior	19	12.1
	Middle	47	29.9
	Operational	92	58.0
Total		**158**	**100.0**

3. Education: most of the respondents were holding the diploma degree 87(55.4%), the bachelor's degree 58(36.9%), then master9 (5.7%) and finally the doctoral 4 (1.9%).

3. Communication with forensic staff, most of the respondents by direct communication (98.7%).

4. Career experiences: The majority of the respondents' experiences were having 6 – 10 years of experience 96 (61.1%) then those with 1-5years of experience 47 (29.9%), followed by15-20years and more 20 years respectively (4.5%).

5. Position: This study divided the position into 3 levels senior, middle and Operational management, most of the respondents were from the operational level 91 (58.0%), from the middle level were 47 respondents (29.9%) and from the senior level 19 respondents (12.1%).

4.3. Study Variables Analysis (Descriptive Analysis):

This part analyses and depict the independent and dependent variables from statistical point of opinion including means, standard deviations, t-values, ranking and importance.

Independent Variables (Autopsy performance and reporting)

Table (4.2) shows that the average means of the respondents' perception bout the degree of enhancing autopsy performance and reporting variables are ranging from 1.242to4.732, with standard deviation that ranges from 0.53to 0.63. Such results show that there is an agreement on enhancing performance. The mean of the enhancing performance is 3.253 with standard deviation 0.37 which indicates that there is an

Agreement on high presence of these variables. Finally, the overall result indicates that there is a significant enhancing performance among The Judicial Experience and Research Center Libya., where (t=8.529>1.96). This indicates that the

forensic staff working at the Judicial Experience and Research Center Libya realize the

importance of the enhancing performance.

Table (4.2): Mean, Standard Deviation, Importance and Ranking of Enhancing performance (Administrative director) Variables:

NO	Item	Mean	Std.Dev	T.value	Important	Sig	Rank
1	The death status identified correctly.	4.598	72377.	27.677	High	ooo.	2
2	The autopsy request issigned by appropriate relative.	1.242	.60342	-36.504-	Low	.ooo	6
3	There is a delay in obtaining the request.	2.4522	1.17912	-5.821-	Medium	000.	35
4	The request was signed by a witness.	1.1847	62861.	-36.184-	Low	.000	7
5	The extent of the autopsy is clear in the request.	4.0318	.78789	16.410	High	.000	4
6	The body is identified in accordance with hospital policy	4.5350	.82064	23.438	High	.000	3
7	The request for summoning to work should be in writing.	4.7325	.53568	40.524	High	.000	1
	Administrative director.	3.2539	.37295	8.529	Medium	.000	

t-Tabulated = 1.96

Forensic staff responsibility

Table (4.3) shows that the means of the respondents' perception about the degree of the of forensic staff responsibility are ranging from 2.10to4.63with standard deviation that ranges from0.43to.84. Such results indicate that there is an agreement on high applying forensic staff responsibility variable items.

Table (4.3): Mean, Standard Deviation, Importance and Ranking of the Forensic staff responsibility:

No	Item	Mean	Std.Dev	T.vailue	Importa nt	Sig	Rank
1	Timeliness autopsy is appropriate to the working times.	3.8089	.80171	12.643	High	.000	2
2	Answers to specific questions posed at time of autopsy.	2.6943	.68559	-5.588-	Medium	.000	6
3	Autopsy results can be used as an educational tool.	3.5605	.84987	8.264	Medium	.000	3
4	During examination and dissection, there is personal protective equipment used	4.6369	.84089	24.392	High	.000	1
5	There are no authorization restrictions for autopsy	3.4204	.78550	6.706	Medium	.000	3
6	The examination process is adequate to demonstrate findings.	3.2675	.79568	4.213	Medium	.000	4
7	The provisional-preliminary anatomic diagnosisaccurately does reflect the gross examination	3.3822	.72973	6.562	Medium	.000	5
8	The microscopic diagnosisaccurately reflectsthe gross finding.	2.6051	1.23910	-3.993-	Medium	.000	8
9	There arean abilityto elicit additional information from the police.	2.1019	.85623	-13.142-	Low	.000	9
	Forensic staff responsibility	3.2753	.43900	7.858	Medium	.000	

t-Tabulated = 1.96

The average mean of the total forensic staff responsibility variable items is 3.2753 with standard deviation 0.439, which indicates that there is an agreement on high implanting of this variable. Finally, the overall result indicates that there is a significant degree of implantation of the Forensic staff responsibility variable at Judicial

Experience and Research Center Libya, where (t=7.858>1.96). This indicates that the forensic staff at Judicial Experience and Research Center Libya realize the importance of the Forensic staff responsibility.

Final autopsy report

Table (4.4) shows that the average means of the respondents' understanding about the degree of the enforcement of final autopsy report items are ranging from2.5to4.6, with standard deviation that ranges from0.11 to 0.70, such results point that there is an acceptance on high applying of final autopsy report variable items. The mean of the total final autopsy report variable items is 3.82 with standard deviation 0.54 which indicates that there is an enforcement on high rooting of this variable. Finally, the overall result indicates that there is a significant degree of implantation of the Final autopsy report variable on the Judicial Experience and Research Center Libya, where (t=18.819>1.96).

Table (4.4): Mean, Standard Deviation, Importance and Ranking of the Final autopsy report

No	Item	Mean	Std.Dev	T-value	Important	Sig	Rank
1	The autopsy report includes the final diagnosis.	4.5541	.86525	22.506	High	.000	2
2	The autopsy report answer all clinical questions	2.9172	1.00615	1.031	Medium	.304	4
3	The clinical questions were answered in the autopsy report.	2.5096	1.19624	5.137	Medium	.000	5
4	The draft and final autopsy report meet the high standard information required from coroner	4.4841	.78123	23.803	High	.000	3
5	The report is delivered to the appropriate department	4.6433	.70722	29.115	High	.000	1
	Final autopsy report	3.8217	.54706	18.819	High	.000	

t-Tabulated = 1.96

This indicates that the forensic staff know the importance of this variable

and its effect on the Turnaround time of autopsy reporting.

Dependent Variable: Turnaround time of autopsy reporting

Autopsy completion time reduction.

Table (4.5) shows that the rate means of the respondents' perception about the step of the application of autopsy completion time reductions are ranging from 2.33 to4.47, with standard deviation that ranges from 0.95 to 0.86. Such results point that there is a convention on high applying autopsy completion time reduction variable items. The mean of the total waiting time variable items is 3.52with standard deviation 0..62which indicates that there is a convention on high implanting of this variable. Finally, the overall result indicates that there is a significant degree of implantation of the autopsy completion time reduction variable on the Judicial Experience and Research Center Libya, where (t=10.612>1.96). This indicates that forensic staff know the importance of this variable and its effect on the Turnaround time of autopsy reporting.

Table (4.5): Mean, Standard Deviation, Importance and Ranking of the Autopsy completion time reduction.

No	Item	Mean	Std.Dev	T.value	Important	Sig	Rank
1	Wereceive the autopsypermit from coroner early.	3.5159	1.04762	6.171	Medium	.000	3
2	The body is appropriately logged into a morgue in accordance with policy.	4.4713	.86647	21.277	High	.000	1
3	The authorities having the right to summon the forensic staff.	3.5096	.93107	6.857	Medium	.000	4
4	Thereare nodelay in communicating with forensic staff.	2.3397	.95375	8.647	Medium	.000	5
5	The autopsy centerworks to decreaseturnaround time.	3.8153	1.04281	9.769	High	.000	2
	the Autopsy completion time reduction.	3.5274	.62271	10.612	Medium	.000	

t-Tabulated = 1.96

Using academic approach to autopsy report

Table (4.6) shows that the rate means of the respondents' perception about the step of the application of the using academic approach to autopsy report are ranging from 1.33 to4.4204, with standard deviation that ranges from 0.55 to 1.05. Such results point that there is a convention on high applying variable items. The mean of the total

waiting time variable items is 3.52with standard deviation 0.62 which indicates that there is a convention on high implanting of the using academic approach to autopsy report of this variable. Finally, the overall result indicates that there is a significant degree of implantation of the using academic approach to autopsy report variable on the Judicial Experience and Research Center Libya, where (t=4.348>1.96). This indicates that forensic staff know the importance of this variable and its effect on the Turnaround time of autopsy reporting.

Table (4.6): Mean, Standard Deviation, Importance and Ranking of the using academic approach to autopsy report

No	Item	Mean	Std.Dev	T.value	Important	Sig	Rank
1	The medico-legal system corresponds to the religion and customs.	4.4204	1.05689	16.839	High	.000	1
2	We can usevarious postmortem techniques in the center.	2.3758	.86539	9.038	Medium	.000	5
3	We recognize the nature of special injuries encountered in cases of violent death.	3.2102	.83230	3.164	Medium	.002	4
4	We use specialize techniques to reach a proper opinion.	1.7389	1.16105	13.610	Low	.000	6
5	We can report the findings in both Arabic and English languages.	3.8917	1.21729	9.179	High	.000	3
6	Weuse clear and non-medical terminology in the center	3.9236	1.07143	10.801	High	.000	2
7	The centeruses continuous performance improvement program.	1.3312	.55917	37.394	Low	.000	8
8	The center enhances autopsy work flow.	1.6306	.70061	24.491	Low	.000	7
	Using academic approach to autopsy report	2.8153	.53233	4.348	Medium	.000	

t-Tabulated = 1.96

4.4. Relationships between the Study Variables

Table (4.7) Bivariate Pearson Correlation test was give rise to assure the independency of data. The rule is that each and every structure should correlate with itself in a way that is much greater to its correlations with other structure. If this rule is positive, then structures are independent and data are ready and valid to be used within regression analyses. Based on the values in Table 4.7, the structures are independent as

they correlate with themselves in a way that is compact in comparison to their correlations with other structure.

Table (4.7): Bivariate Pearson Correlation (correlation matrix)

	A	B	C	D	E
A	1				
B	.290**	1			
C	.216**	.622**	1		
D	.353**	.442**	.550**	1	
E	.224**	.433**	.410**	.552**	1

**Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed)

A: Administrative director. **B:** Forensic staff responsibility. **C:** Final autopsy report.

D: Delays in obtaining autopsy permit .**E:** Using academic approach to autopsy report.

The correlation matrix between the study variables has been statistically performed, the rate of coefficient correlation keeps between the limit of -1 and +1.

However, the correlation coefficient (1) is called perfect correlation. And thus, this might cause a collinearity problem. Therefore, the value of correlation coefficient should not exceed (0.9) (Gujarati, 1998). Thus, the above table shows the relationship among the study variables.

4.5. Testing Study Hypothesis

To test the hypotheses, the multiple regressions analysis is used to analyze the effect of the Autopsy performance and reporting on Turnaround time of autopsy reporting .To be able to use multiple regressions the following assumptions should be fulfilled: Normality, validity, reliability, multi- colleanearity , independence of errors and correlation. R2 also indicates the fitness of the model (Sekaran 2003).

Normal Distribution (Histogram)

The histogram in the figure (4.1) shows that the data were normality distributed, since the residuals so not affect the normal distribution.
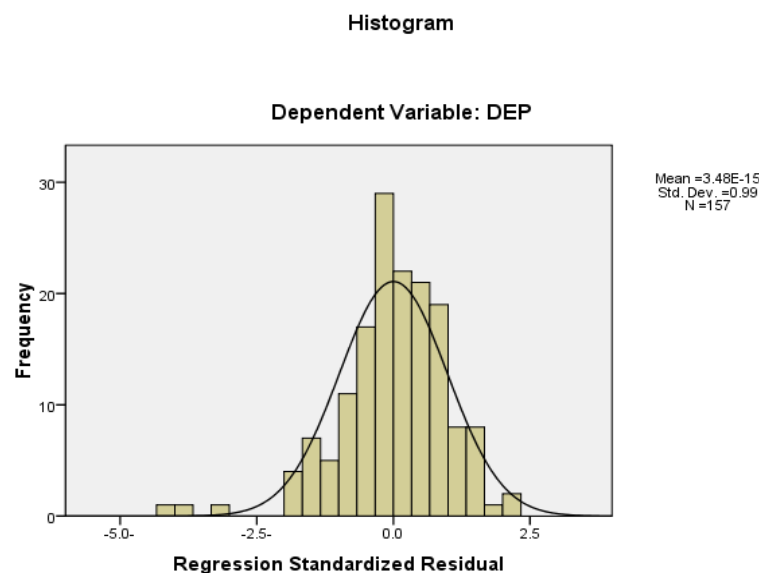
Figure (4.1): Normal Distribution

Linearity Test:

Figure (4.2) shows that the relationship between independent and dependent

Variables is linear.

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: DEP
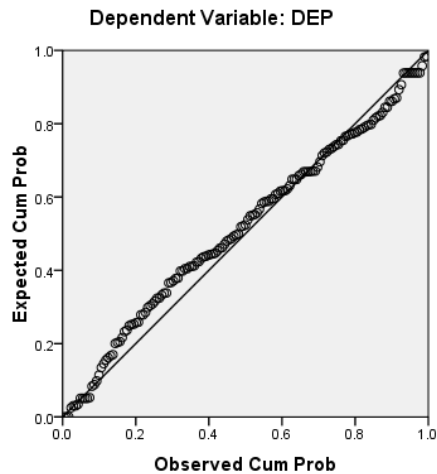
Figure (4.2): Linearity Test

Test of Multicollinearity: Both tolerance and Variance Inflation Rate (VIF) values are utilized to make sure that constructs are independent and multicollinearity is not a likely threat. The tolerance values should be more than 0.20 and VIF values should be less than 5 for constructs to be independent and for assuring that multicollinearity is not available amongst constructs.

Table (4.8) result also shows that the VIF values are less than 5 and the tolerance values are more than 0.2. This indicates that there is no multi-collinearity within the independent variables of the study.

Table (4.8): Multi-Collinearity Test for Main Hypothesis

No	Item	Tolerance	VIF
1	Administrative director	.914	1.094
2	Forensic staffresponsibility	.588	1.700
3	Final autopsy report	.612	1.633

The Main Hypothesis

There is no significant impact of enhancing autopsy performance on the autopsy turnaround time reporting at ($\alpha \leq 0.05$).

Multiple Regressions:

Table (4.9): Results of Multiple Regressions Analysis (ANOVAa):   performance and reporting against turnaround time of autopsy reporting.

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	Adjuste dR2	F-value	Sig	T	Sig(p-value)	Beta
	.594	.353	.340	27.831	.000a			
Constant						.740	.461	.254
Administrative director						2.549	.012	.233
Forensic staff responsibility						2.632	.009	.255
Forensic staff responsibility						4.267	.000	.325

The dependent variable is Turnaround time of autopsy reporting

It can be visible from the result in table (4.9) that the multiple correlation coefficient R = 0.594 indicates that there is a positive correlation between autopsy performance and reporting and turnaround time of autopsy reporting. Also, the value of R2= 0.353.This means that the autopsy performance and reporting can account (35.3%) of the variation of the turnaround time of autopsy reporting.

Furthermore, it is noticed that the value of adjusted R2 is very close to the value ofR2. If the adjusted R2 is excluded from R2 (0.353-0.340) = 0.013. This little shrinking (0.013) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome was 0.013.

Also, the table above shows the probability of F-value and it is significant at 0.05, which indicates that autopsy performance and reporting has a significant effect on turnaround time of autopsy reporting appropriately, the first main null-hypothesis were rejected and the alternative hypothesis accepted (There is a direct impact of autopsy performance on the autopsy turnaround time reporting, in the study sample, at ($\alpha \leq$ 0.05).

As mentioned above the sub hypotheses; the sig-value of corporate evaluation is (0.012) and it is significant at ($\alpha \leq 0.05$) and the t-calculated is (2.549) and it is higher than the t tabulated (1.96). This indicates that the administrative director has a significant effect on the turnaround time of autopsy reporting. Therefore, the first sub-null hypothesis was rejected and the alternative accepted (There is a direct impact of the administrative director on the turnaround time of autopsy reporting in the study sample, at ($\alpha \leq 0.05$).

Also, the above table shows that the sig-value of forensic staff responsibility is (0.009) and it is significant at ($\alpha \leq 0.05$ and the t-calculated (2.632) is higher than the t-tabulated (1.96). This indicates that the forensic staff responsibility has a significant effect on the turnaround time of autopsy reporting. Therefore, the second null hypothesis Rejected (There is a direct impact of the forensic staff responsibility on turnaround time of autopsy reporting in the study sample, at ($\alpha \leq 0.05$).

Also, the above table indicate that sig-value of final autopsy report is (.000) and it is significant at ($\alpha \leq 0.05$ and the t-calculated (4.267) is higher than the t-tabulated (1.96).This indicates that the final autopsy report has insignificant effect on the turnaround time of autopsy reporting. Therefore, the second null hypothesis Rejected (There is a direct impact of the final autopsy report on turnaround time of autopsy reporting in the study sample, at ($\alpha \leq 0.05$).

Moreover, the results show that the value of Beta for final autopsy report (0.325) and it is higher than the forensic staff responsibility (0.255) and administrative director (.233). This reveal that if the Final autopsy report increased by one unit; then the turnaround time of autopsy reporting was increase by 0.325.

To examine the first null sub hypothesis, the simple regression was used as below "There is no significant impact of administrative director on turnaround time autopsy reporting at ($\alpha \leq 0.05$).

Table (4.10) Simple Regression Analysis 1.1

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	AdjustedR2	F-value	Sig	T	Sig(p-value)	Beta
	.353	.124	.119	22.028	.000a			
Constant						3.920	.000	.1.611
Administrativ e director						4.693	.000	.233

Delays in obtaining autopsy permit.

To be visible from the result in table (4.10) that the multiple correlation coefficient R = 0.353 indicates that there is a strong positive correlation between the administrative director and delays in obtaining autopsy permit. Also, the value of R2 = 0.124. This means that the administrative director can account (12.4%) of the variation of the delays in obtaining autopsy permit .Further, it is note that the value of adjusted R2 is very close to the value ofR2. If the adjusted R2 is excluded from R2 (0.124-0.119) = 0.005. This little shrinking (0.005) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome were 0.005.Also, the table above offer the probability of F-value and it is significant at 0.05, which indicates that administrative director has a significant effect on in obtaining autopsy permit. The sig-value of administrative director is (0.000) and it is significant at ($\alpha \leq 0.05$) and the t-calculated is (4.693) and it is higher than the t-tabulated (1.96).

This indicates that the administrative director has a significant effect on the delays in obtaining autopsy permit. Therefore, the first sub-null hypothesis was rejected and

the alternative accepted (There is a direct impact of administrative director on the delays in obtaining autopsy permitting the study sample, at ($\alpha \leq 0.05$).

To examine the second- null sub hypothesis, the simple regression was used as below" There is no significant impact of administrative director on using academic approach to autopsy report at ($\alpha \leq 0.05$).

Table (4.11) Simple Regression Analysis 1.2

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	Adjuste dR2	F-value	Sig	T	Sig(p-value)	Beta
	..224	.050	.044	8.179	.005a			
Constant						4.852	.000	1.776
Administrativ e director						2.860	.000	.320

Using academic approach to autopsy report

We see from the result in table (4.11) that the multiple correlation coefficient R = 0.224 indicates that there is a strong positive correlation between Administrative director and using academic approach to autopsy report. The value of R2= 0.050. This means that the Administrative director can account (5.0%) of the variation of the using academic approach to autopsy report

Furthermore, it is noticed that the value of adjusted R2 is very close to the value ofR2. If the adjusted R2 is excluded from R2 (0.050-0.044) = 0.006. This little shrinking (0.006) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome was 0.006.

The table above shows the probability of F-value and it is significant at 0.05, which indicates that administrative director has a significant effect on using academic approach to autopsy report.

The sig-value of administrative director is (0.000) and it is significant at ($\alpha \leq 0.05$) and the t-calculated is (2.860) and it is higher than the t-tabulated (1.96). This indicates that the administrative director has a significant effect on the using academic approach to autopsy report. Therefore, the second sub-null hypothesis was rejected and the alternative accepted (There is direct impact of administrative director on using academic approach to autopsy report at ($\alpha \leq 0.05$)

To examine the third- null sub hypothesis, the simple regression was used as below "There is no significant impact of forensic staff responsibility on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

Table (4.12) Simple Regression Analysis 1.3

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	Adjuste dR2	F-value	Si g	T	Sig(p-value)	Beta
	.442 a	.195	.190	37.635	.00 0a			
Constant						4.364	.000	1.474
Forensic staff responsibility						6.135	.000	.627

Delays in obtaining autopsy permit.

We see from the result in table (4.12) that the multiple correlation coefficient R = 0.442 indicates that there is a strong positive correlation between forensic staff responsibility and delays in obtaining autopsy permit. The value of R^2 = 0.195. This means that the forensic staff responsibility can account (19.5%) of the variation of the delays in obtaining autopsy permit.

It is noticed that the value of adjusted R^2 is very close to the value of R^2. If the adjusted R^2 is excluded from R^2 (0.195-0.190) = 0.005. This little shrinking (0.005) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome was 0.005.

The table above shows the probability of F-value and it is significant at 0.05, which indicates that forensic staff responsibility has a significant effect on the delays in obtaining autopsy permit.

The sig-value of forensic staff responsibility is (0.000) and it is significant at ($\alpha \leq$ 0.05) and the t-calculated is (6.135) and it is higher than the t-tabulated (1.96). This indicates that the forensic staff responsibility has a significant effect on the delays in obtaining autopsy permit. Therefore, the third sub-null hypothesis was rejected and the alternative accepted (There is direct impact of the forensic staff responsibility on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

To examine the fourth- null sub hypothesis, the simple regression was used as below" There is no significant impact of Forensic staff responsibility on using Academic approach to autopsy report at ($\alpha \leq 0.05$).

Table (4.13) Simple Regression Analysis 1.4

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	Adjuste dR2	F-value	Sig	T	Sig(p-value)	Beta
	.433 a	.187	.182	35.712	.000a			
Constant						3.780	.000	1.097
Forensic staffresponsib ility						5.976	.000	.525

Academic approach to autopsy report**.**

The result in table (4.13) that the multiple correlation coefficient R = 0.433 indicates that there is a strong positive correlation between forensic staff responsibility and academic approach to autopsy report. The value of R2 = 0.187. This means that the forensic staff responsibility can account (18.7%) of the variation of the academic approach to autopsy report.

It is noticed that the value of adjusted R2 is very close to the value of R2. If the adjusted R2 is excluded from R2 (0.187-0.182) = 0.005. This little shrinking (0.005) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome   was 0.005.

The table above shows the probability of F-value and it is significant at 0.05, which indicates that forensic staff responsibility has a significant effect on the academic approach to autopsy report.

The sig-value of forensic staff responsibility is (0.000) and it is significant at ($\alpha \leq$ 0.05) and the t-calculated is (5.976) and it is higher than the t-tabulated (1.96). This indicates that the forensic staff responsibility has a significant effect on the academic approach to autopsy report. Therefore, the forth sub-null hypothesis was rejected and the alternative accepted (There is direct impact of the forensic staff responsibility on academic approach to autopsy report at ($\alpha \leq 0.05$).

To examine the fifth- null sub hypothesis, the simple regression was used as below "There is no significant impact of final autopsy report on delays in obtaining autopsy permit. At ($\alpha \leq 0.05$).

Table (4.14) Simple Regression Analysis 1.5

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	Adjuste R2	F-value	Sig	T	Sig(p-value)	Beta
	.433 a	.187	.182	35.712	.000a			
Constant						3.780	.000	1.133
Final autopsy report						8.206	.000	.626

Delays in obtaining autopsy permit.

Table (4.14) we found, that the multiple correlation coefficient R = 0.550 indicates that there is a strong positive correlation between final autopsy report and delays in obtaining autopsy permit. The value of R2 = 0.303. This means that the final autopsy report can account (30.3%) of the variation of the delays in obtaining autopsy permit.

We noticed that the value of adjusted R2 is very close to the value of R2. If the adjusted R2 is excluded from R2 (0.303-0.298) = 0.005. This little shrinking (0.005) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome was 0.005.

The above table shows the probability of F-value and it is significant at 0.05, which indicates that final autopsy report has a significant effect on the delays in obtaining autopsy permit.

 The sig-value of forensic staff responsibility is (0.000) and it is significant at ($\alpha \leq 0.05$) and the t-calculated is (8.206) and it is higher than the t-tabulated (1.96). This indicates that the final autopsy report has a significant effect on the delays in obtaining autopsy permit. Therefore, the fifth sub-null hypothesis was rejected and the alternative accepted (There is no significant impact of final autopsy report on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

To examine the sixth- null sub hypothesis, the simple regression was used as below "There is no significant impact of final autopsy report on using academic approach to autopsy report.At($\alpha \leq 0.05$).

Table (4.15) Simple Regression Analysis 1.6

Variables	Model summary			ANOVA		Coefficients(a)		Unstandardized coefficients
	R	R2	Adjuste dR2	F-value	Si g	T	Sig(p-value)	Beta
	.410 a	.168	.163	31.329	.00 0a			
Constant						4.689	.000	1.290
Forensic staff responsibility						5.597	.000	.399

Using academic approach to autopsy report.

The result in table (4.15) that the multiple correlation coefficient R = 0.410 indicates that there is a strong positive correlation between final autopsy report and academic approach to autopsy report. The value of R2 = 0.168. This means that the final autopsy report can account (16.8%) of the variation of the academic approach to autopsy report.

It is noticed that the value of adjusted R2 is very close to the value of R2. If the adjusted R2 is excluded from R2 (0.168-0.163) = 0.005. This little shrinking (0.005) means that if the model has been fitted when the whole population participates in the study, the higher variance in the outcome was 0.005.

The table above shows the probability of F-value and it is significant at 0.05, which indicates that final autopsy report has a significant effect on the academic approach to autopsy report.

The sig-value of forensic staff responsibility is (0.000) and it is significant at (α ≤ 0.05) and the t-calculated is (5.597) and it is higher than the t-tabulated (1.96). This indicates that the final autopsy report has a significant effect on the academic approach to autopsy report. Therefore, the sixth sub-null hypothesis was rejected and the alternative accepted (There is direct impact of the final autopsy report on academic approach to autopsy report at (α≤0.05)

Table (4.16) Summary of Hypotheses testing

No	Result	Acceptance of alternative hypotheses
HO.1	Rejected	There is a direct impact of enhancing autopsy performance on the autopsy turnaround time reporting at (α≤0.05).
HO.1.1	Rejected	There is a direct impact of administrative director on the delays in obtaining autopsy permit in the study sample, at (α ≤ 0.05
HO.1.2	Rejected	There is direct impact of administrative director on using academic approach to autopsy report at(α≤0.05)
HO.1.3	Rejected	There is direct impact of the forensic staff responsibility on using academic approach to autopsy report at(α≤0.05)
HO.1.4	Rejected	There is direct impact of the forensic staff responsibility on academic approach to autopsy report at(α≤0.05)
HO.1.5	Rejected	There is impact of final autopsy report on delays in obtaining autopsy permit at(α≤0.05)
HO.1.6	Rejected	There is direct impact of the final autopsy report on academic approach to autopsy report at (α≤0.05

CHAPTER FIVE

RESULTS ANALYSIS AND RECOMMENDATION

5.1 Results:

The current study posed a set of questions, placing the hypotheses and their connection to the impact of the study variables. The study yielded many results that contributed to solving the study problem explained in chapters (1-2), explaining the questions and hypotheses of the study. The main results are;

1. The importance level of administrative director was Medium with mean (3.25) and std. dev. (.37)   with correlation coefficient R=.353.

2. The importance level of forensic staff responsibility was Medium with mean (3.27) and std.dev (.439) with correlation coefficient R=.224.

3. The importance level of final autopsy report was Medium with mean (3.82) and std. dev (.547) with correlation coefficient=.433.

4. There is a significant effect of the Enhancing autopsy performance for reporting (Administrative director, Forensic responsibility and Final autopsy report) on turnaround time of autopsy reporting at level ($\alpha \leq 0.05$).

5. There is a significant effect of administrative director on the delays in obtaining autopsy permit in the study sample, at ($\alpha \leq 0.05$).

6. There is a significant effect of administrative director on the delays on using academic approach to autopsy report at ($\alpha \leq 0.05$).

7. There is direct impact of the forensic staff responsibility on delays in obtaining autopsy permit at ($\alpha \leq 0.05$).

8. There is direct impact of the forensic staff responsibility on academic approach to autopsy report at (α≤0.05).

9. There is direct impact of final autopsy report on delays in obtaining autopsy permit at (α≤0.05).

10. There is direct impact of the final autopsy report on academic approach to autopsy report at (α≤0.05).

As above result all the descriptive analysis of the variables are high, which indicate that there is direct impact of independent variable on dependent variable.

There is a significant important of correlation between administrative director with Judicial Experience and Research Center Libya decrease turnaround time of autopsy reporting in comparison with of Džinić (2015). Noticed that, there is a notable positive correlation (p<0.01) between administrative direction way on each level of organization in elected administrative groups.

There is a significant important of correlation between forensic responsibility between the turnaround time of autopsy reporting with the Judicial Experience and Research Center Libya forensic staff which confirmed with Siebert(2009) which explained role for decrease the turnaround time reporting .

The result indicates that there is a significant high degree of application of the final autopsy report (The autopsy report includes the final diagnosis, the draft and final autopsy report meet the high standard information required from coroner, the report is delivered to the appropriate department) which strongly confirms with Siebert (2009

Bove& Iery (2002) and Zarbo (1999) which explain how these quotations answered by forensic staff important for final autopsy report.

There is a significant important of correlation for delay in obtaining autopsy permit with forensic staff responsibility ,administrative director in the forensic staff of Judicial Experience and Research Center Libya, confirmed by Sanchez, and Kim(2016) which explained delays in obtaining autopsy permit, have given a reasons for this drop in autopsy rates reporting.

The result indicates that forensic staff working at the Judicial Experience and Research Center Libya recognize the high importance of the application of academic approach .This agree with Giannelli.(2007), Pinheiro, (2006) Peterson (2006) which emphasis important of academic approach with reporting .

5.2. Conclusion:

The outcome shows that there is an approval among participants on high enforcement of each Enhancing autopsy performance for reporting (Administrative director, Forensic staff responsibility and Final autopsy report), which indicates that there is an agreement on high presence of these variables in The Judicial Experience and Research Center Libya.

Furthermore, the overall result indicates that there is a significant enforcement of the enhancing autopsy reporting for autopsy among The Judicial Experience and Research

Center Libya. This indicates that forensic staff working at The Judicial Experience and Research Center Libya realize the importance of the implantation of these variables.

5.3. STUDY RECOMMENDATION

1- The popular study found that the imp of applying the enhancing performance of an autopsy on the turnaround time for autopsy reporting to enhance the process of Judicial Experience and Research Center Libya

2-The popular study found that the hypotheses rejected, which means that all in depended variable have a direct impact.

3- The Judicial Experience and Research Center Libya must improve the autopsy performance reporting on all variable affected the autopsy processing.

4- The current study recommends developing capability of administrative director in the Judicial Experience and Research Center Libya for the autopsy report to improve the final report.

5- The study recommends that forensic responsibility must by developed to high level in the Judicial Experience and Research Center Libya.

6. The study recommends that final autopsy report must be under regular revision to reach the high standard about quality.

7. The study recommends that must be stressed on developed a program for prevent the delayed of   obtaining autopsy permit the Judicial Experience and Research Center Libya.

8. The study recommends that must be stressed for using of teaching and training in the center of forensic the Judicial Experience and Research Center Libya.

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Appendices

Appendix (1)

List of Esteemed Academics That Arbitrated the Questionnaire

1	Prof Khalil Ibrahim Elttyef	Faculty of pharmacology, MEU
2	Prof. Mohammad Al No'imi	Ph. D. Management Jordan University
3	Prof Osama Rabbaba.	Management Middle East University
4	Prof. Fayez najjar.Managemen	The world Islamic Sciences Education University
5	Assistant Prof Ahamd Ali Harasis	Management MEU.
6	Associate Professor Marzouq Ayed Al-Qa'id.	The world Islamic Sciences Education University.
7	Assistant Prof. Samer Mousa ALJABALI	Management MEU.
8	Associate Professor Mohammed Abdulkarim Al-Riggad	The world Islamic Sciences Education University
9	Associate Professor Abdullah Ahmed Al Shoura	The world Islamic Sciences Education University
10	Dr. Abdel-Aziz Ahmad Sharabati	Management MEU.
11	Dr. Ahmad Ali Saleh Ph. D	Management MEU.

Appendix (2)

THE IMPACT OF ENHANCING PERFORMANCE OF AUTOPSY ON THE TURNAROUND TIME OF AUTOPSYREPORTING IN LIBYA

Part1: Demographics and General Information:-

In this part, I would like to know some basic background information about you. Please

tick (√) the appropriate answer.

Gender.

□ Male□ Female

Age

□ Less than25years□25-less than35years.

□ 35-less than45years.□45years and more.

Educational Qualification.

□Diploma□ Bachelor's degree

□ Master degree□ Doctoral degree

Commnication with

□Direct□ Indirect

Career's experience?

□ 1–5 years□ 6-10 years□11-15

□ 16-20 years□ More than 20 years

Position:-

Senior management □ Middle management □ operational manager□

Part2:

Please circle an answer for each of the following statements based on your experience with the autopsy performance and reporting, using the scale given below (from 1 to 5):

(1) Never (2) Scarcely (3) Sometime (4) Often, and (5) Always.

	Paragraph	Never (1)	Scarcely(2)	Sometime(3)	Often (4)	Always (5)
Autopsy performance and reporting						
Administrative processing notification						
1	The death status identified correctly.	1	2	3	4	5
2	The autopsy request is signed by appropriate relative.	1	2	3	4	5
3	There is a delay in obtaining the request.	1	2	3	4	5
4	The request was signed by a witness.	1	2	3	4	5
5	The extent of the autopsy is clear in the request.	1	2	3	4	5
6	The body is identified in accordance with hospital policy.	1	2	3	4	5
7	The request for summoning to work should be in writing.	1	2	3	4	5
Forensic staff responsibility						
8	Timeliness autopsy is appropriate to the working times.	1	2	3	4	5
9	Answers to specific questions .posed at time of autopsy	1	2	3	4	5
10	Autopsy results can be used as an educational tool.	1	2	3	4	5
11	During examination and dissection, there is personal protective equipment used.	1	2	3	4	5
12	There are no authorization restrictions for autopsy.	1	2	3	4	5
13	The examination process is adequate to demonstrate findings.	1	2	3	4	5
14	The provisional-preliminary anatomic diagnosis accurately does reflect the gross examination	1	2	3	4	5
15	The microscopic diagnosis accurately reflects the gross finding.	1	2	3	4	5

16	There are an ability to elicit additional information's from the police.	1	2	3	4	5
	Final autopsy report					
17	The autopsy report includes The final diagnosis.	1	2	3	4	5
18	The autopsy report answer all clinical questions .	1	2	3	4	5
19	The clinical questions were answered in the autopsy report.	1	2	3	4	5
20	The draft and final autopsy report meet the high standard information required from coroner.	1	2	3	4	5
21	The report is delivered to the appropriate department.	1	2	3	4	5

Part 3:

Please circle an answer for each of the following statements based on your experience with turnaround time of autopsy reporting, using the scale given below (from 1 to 5):
(1) Never (2) Scarcely (3) Sometime (4) Often, and (5) Always.

	Paragraph	Never (1)	Scarcely(2)	Sometime(3)	Often (4)	Always (5)
The autopsy turnaround time reporting. **Autopsy completion time reduction.**						
1	We receive the autopsy permit from coroner early.	1	2	3	4	5
2	The body is appropriately logged into a morgue in accordance with policy.	1	2	3	4	5
3	The authorities having the right to summon the forensic staff.	1	2	3	4	5
4	There are no delay in communicating with forensic staff.	1	2	3	4	5
5	The autopsy center works to decrease turnaround time.	1	2	3	4	5
Using academic approach to autopsy report						
5	The medico-legal system corresponds to the religion and customs.	1	2	3	4	5
6	We can use various postmortem techniques in the center.	1	2	3	4	5
7	We recognize the nature of special injuries encountered in cases of violent death.	1	2	3	4	5
8	We use specialize techniques to reach a proper opinion.	1	2	3	4	5
9	We can report the findings in both Arabic and English languages.	1	2	3	4	5
10	We use clear and non-medical terminology in the center.	1	2	3	4	5
11	The center uses continuous performance improvement program.	1	2	3	4	5
12	The center enhances autopsy work flow.	1	2	3	4	5