

## **A Profile of Medical Laboratory Technologists**

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**Objective:** To analyze the profile of medical laboratory technologists working in the major hospitals of the eastern province including personal data as well as career patterns.

**Method:** A specially designed questionnaire was constructed in order to obtain personal and laboratory data of medical laboratory technologists in the eastern province during the period from 2002 to 2003. Three hundred questionnaires were distributed to five major hospitals in the Eastern Province, 215 were returned completed.

**Result:** Two hundred and fifteen technologists responded to the survey. The mean age was  $35.99 \pm 8.6$  years, 128 (59.5%) were female medical laboratory technologists, 135 (62.79%) were non-Saudi and 80 (37.2%) were Saudi. The majority of respondents were from King Fahd Hospital of the University, Al-Khobar 85 (39.5%). The vast majority had a Bsc. degree as their highest degree 194 (90%). One hundred eighty-three (85.1%) were staff technologists, 24 (11.2 %) laboratory supervisors and six (2.8%) laboratory managers.

**Conclusion:** A descriptive analysis of medical laboratory technologists' personal data showed a need for Saudi medical laboratory technologists.

*Bahrain Med Bull 2006; 28 (3):*

A medical laboratory technologist is an important member of the health care team. A caring and professional attitude, a flair for sciences and the ability to work well alone and with others are valuable assets in this career. The policy of the Kingdom of Saudi Arabia is to employ Saudi nationals into the health services. Both the Ministry of Health and Ministry of Higher Education have evolved a strategy for developing Saudi citizens in the health fields. It has been estimated that the needs of the Kingdom for allied medical health professionals is about 130,000 but only 30% of this number is currently Saudi<sup>1</sup>. As the 21<sup>st</sup> century approached and Saudization is a national agenda it is time for the academic, professional, and employment institutions to recognize these professionals and encourage them. The main objectives of this study was to look into the profile of medical laboratory technologists working in the Eastern Province of the Kingdom.

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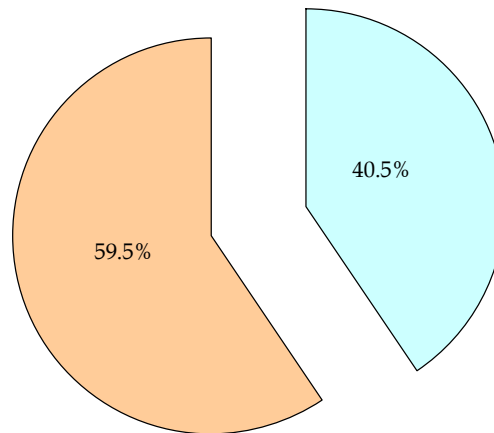
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## METHOD

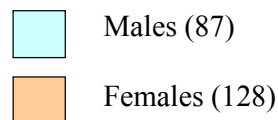
The study was carried out during the years 2002 – 2003. A self administered questionnaire was distributed to all laboratory administrators in the major government hospitals of the eastern province. Three hundred questionnaires were distributed, 215 medical laboratory technologists responded. The survey was developed to collect personal data and other information including current job titles, laboratory speciality, type of institution and education. There was an open ended question to assess what laboratory competencies they perceived to be most important for MLTs and the format of this questionnaire was chosen to collect data on their views without our influence or limitations. The results were entered into the computer and statistical analysis was done using the Statistical Package for Social Sciences (SPSS). The mean and standard deviation were determined.

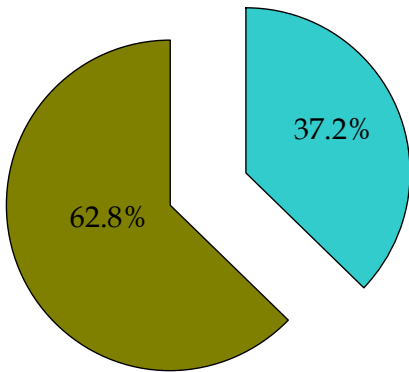
## RESULT

- I. **Personal Characteristics:** 215 complete questionnaires were received from medical laboratory technologists in the different hospitals of the region. The mean age was  $35.99 \pm 8.6$  years; the youngest age was 23 years and the oldest was 58 years.

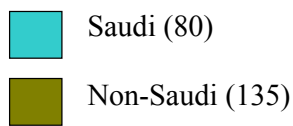


**Figure 1: Gender**



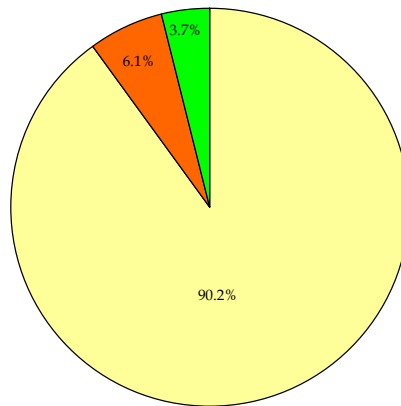


**Figure 2: Nationality**

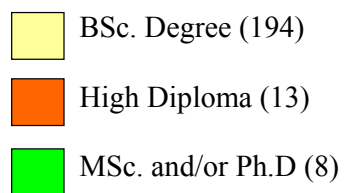


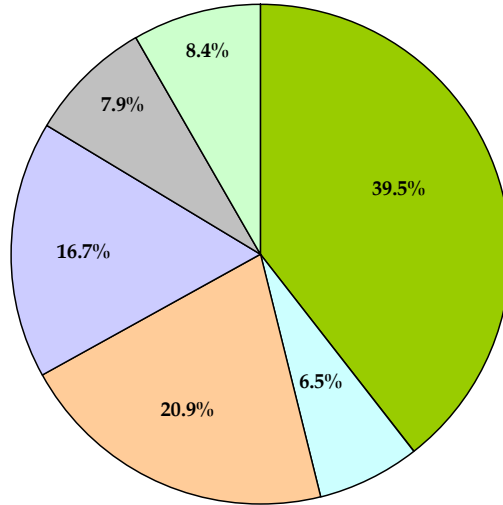
**NON-SAUDI:**

20 (15%)	Arab
76 (56.3%)	From the Philippines
22 (16.3%)	Indian/Pakistani
17 (13%)	Other nationalities

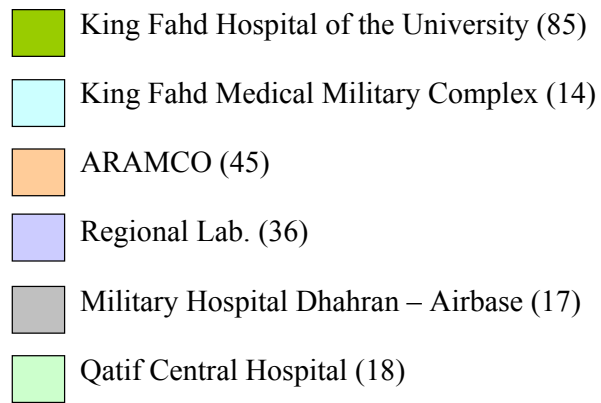


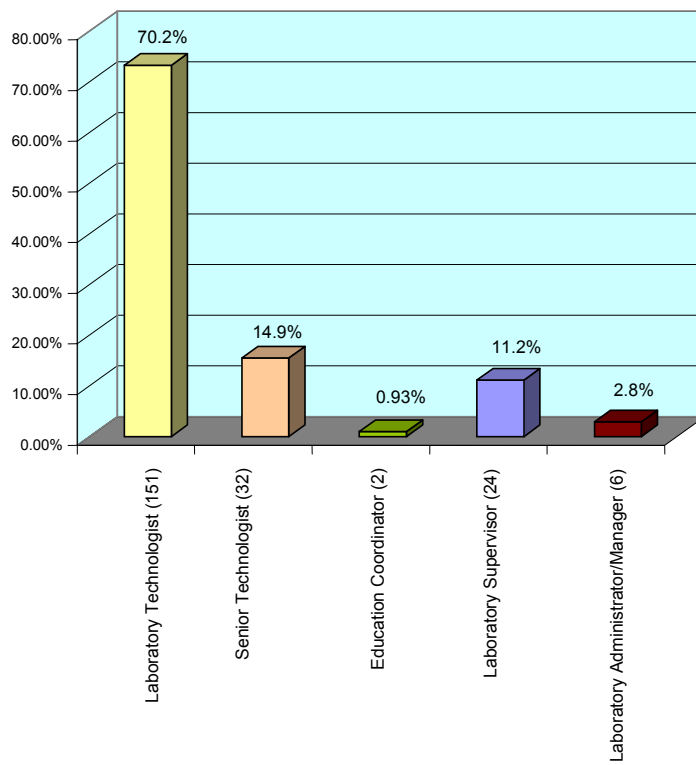
**Figure 3: Highest Degree Held**



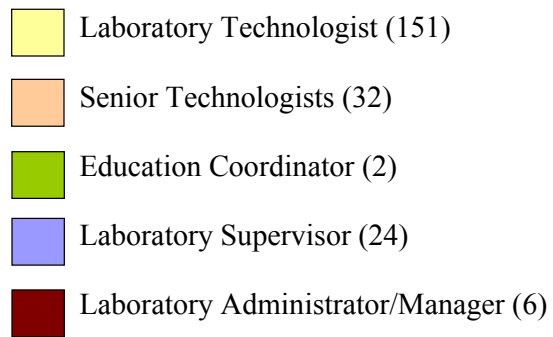


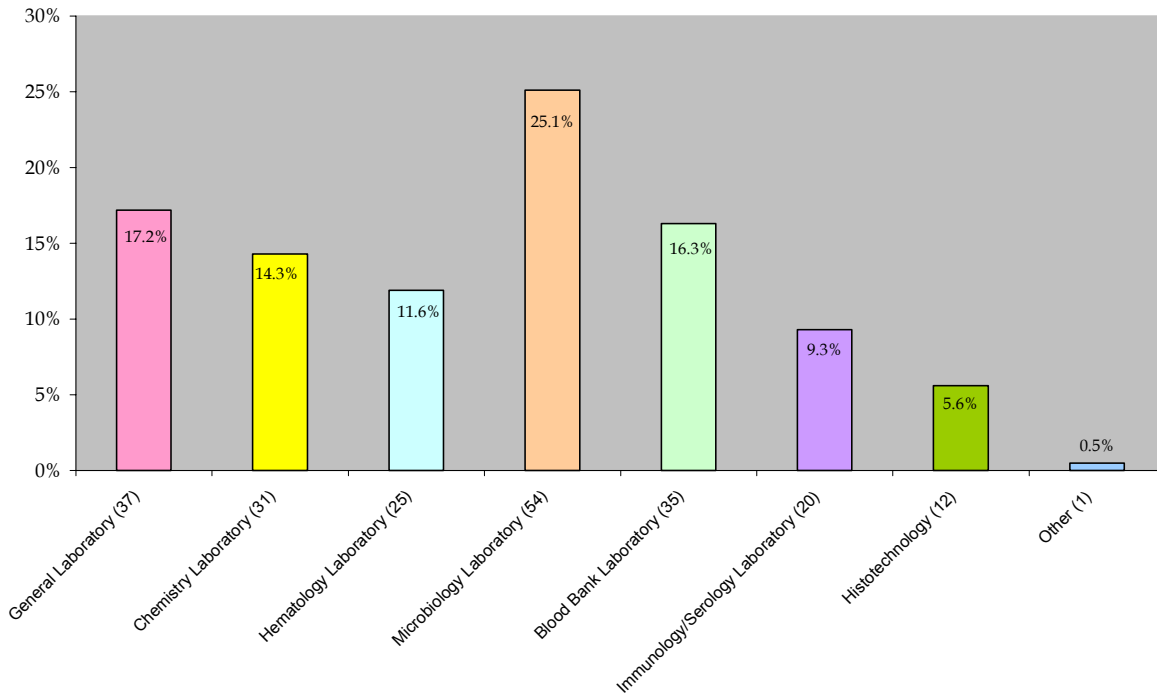
**Figure 4: Institution Location**





**Figure 5: Occupation**





**Figure 6: Area of Laboratory Responsibility**

Responses to the question “**What skills and competencies are most important in your current work setting?**” The categories were ranked in order based on the number of comments in each category as follows:

1. Preventive and corrective maintenance
2. Performing analytical tests
3. Management and supervision
4. Specimen collection
5. Professional skills
6. Teamwork
7. Clinical correlation/Quality assurance
8. Educational Methods
9. Method evaluation and research development

## **DISCUSSION**

This brief study was carried out to analyze the profile of medical laboratory technologists (MLTs) in different laboratories of the main hospitals in the eastern province. The results showed that the majority of MLTs are females 128 (59.5%); it is known that this field is dominated by female staff and historically MLT has been considered a good job for women<sup>2-5</sup>. The majority were non-Saudi 135 (62.79%), with the majority being from Philippine. This distribution by nationality is quite similar to another study from the Kingdom “concerning health care workers” knowledge about needle stick injuries<sup>6</sup>. In that study 10% of the health workers were Saudi, 57% Filipino, 7% Indian and 10% Arab. That study included nurses as well as MLTs. The majority of the MLTs 194 (90%) in this study held BSc. degrees in MLT/CLS as their highest degree. Internationally most of MLTs have BSc. degrees<sup>4,5</sup>. BSc. prepared medical technologists are among the most educated and valued staff members. A report from the United States demonstrated that 559 (95.2%) of the MLTs studied

held BSc.degrees and only 28 (4.8%) had postgraduate degrees<sup>4</sup>. BSc. programs in MLT are the minimum education or requirement that educates technologists to be able to supervise, perform and interpret routine laboratory tests. The mean age was  $36 \pm 8.6$  years (range 23 – 58 years). This age range resembles many other surveys on personal characteristics of MLTs, which showed a range of 21 – 55 years<sup>5</sup>. Most respondents held the position of staff technologists 183 (85.1%) which are responsible for most of the daily routine work in the laboratories, while 24 (11.2% ) were supervisors, six (3%) laboratory managers and two (1%) education coordinators. In most large size hospitals, the distribution is very similar. These findings are comparable to those reported for the USA where 79.7% of technologists were staff technologists and 11% were managers and/or supervisors and education coordinators<sup>4</sup>. Many laboratory professionals choose to work at “the bench” which is the central workstation and testing area in a laboratory. Most of the “hands-on” technical work is performed here on a daily basis. MLTs who produce superior quality work at the bench or who gain years of experience can be promoted to the supervisory level. The laboratory manager may be a pathologist and/or a technologist with both solid leadership ability and bench experience to make sure that the quality of work done in the laboratory meets the highest standards. In university and large hospitals there are program and training education coordinators to supervise and guide students and other trainees through clinical training practice and provide continuous medical education for laboratory staff.

The majority 54 (25.1%) were assigned to microbiology laboratory, then generalists 37 (17.2%) who are assigned and able to work in more than one major discipline according to the need of the hospital and laboratory setup. Other areas of responsibility include blood bank 35 (16.3%), chemistry 31 (14.4%), hematology 25 (11.6%), immunology/serology 20 (9.3%), histotechnology 12 (5.6%) and others one (0.5%) which includes, for example, cytogenetics and cytology etc. Blood bank and hematology laboratories have the highest number of MLTs due to the workload in these areas<sup>4</sup>. The laboratory setup will determine the distribution of MLTs, there may be smaller hospitals where laboratories are in one area or other larger hospitals where each laboratory is separate. It is important also to recruit technologists to the “rare” specialities like cytology, molecular biology, electron microscopy and cytogenetics. Private hospitals were not included in this survey, but the hospitals studied are considered medium to large-sized tertiary hospitals. Also many of the surveyed MLTs are not employed in their area of interest, but according to hospital laboratory need. This is why orientation programs are important. The comments provided by respondents on the skills competencies provide us with a picture of current MLTs. They are technically competent and knowledgeable about test methodology. Most important they are concerned with preventive measures, solving problems, quality assurance and are involved in management and leadership of the clinical laboratory. The present study was designed to look into the personal characteristics and profile of MLTs working in the major hospitals of the eastern province. The study is now being repeated in the years 2004 – 2005 for comparison and to provide recommendations accordingly.

## CONCLUSION

**This brief study shows the need for qualified Saudi Citizen Laboratory technologists to cover the important areas and aspects related to MLT in Saudi Arabia. Further studies are being conducted to look into the factors that provide job satisfaction, motivation and retention of clinical laboratory technologists.**

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