LABORATORY EMPLOYEES' PERCEPTION ABOUT THEIR WORKLOAD AND WORKING ENVIRONMENT IN GOVERNMENTAL PRIMARY HEALTH CARE MEDICAL LABORATORIES, GAZA STRIP (PALESTINE)

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ABSTRACT

Background: Primary health care medical laboratories play a vital role in providing a high quality service to meet the needs of the clients, community and health staff. To ensure a high quality of laboratory service it should be well managed in term of human and physical resources.

Aims & Objective: To determine employees' perception about their workload and working environment.

Material and Methods: A cross sectional study was carried out on the governmental primary health care medical laboratories in the Gaza Strip. Data had been collected using a self-administered employee questionnaire to get information about employees' perception, and an observational checklist to get information about staff distribution and their working environment.

Results: The research findings indicate that, PHC laboratories employees' knowledge about the definition of workload and its measurement tends to be low. According to the findings, 66% of employees believed that over-workload exists in PHC laboratories and they attribute their feeling of being overloaded to factors such as inadequacy of staff, increasing work intensity, increasing paperwork, frequent equipment failure and absence of clear job descriptions. Regarding staffing decisions, 45% of employees have negative perceptions regarding staffing decisions in the sense of being fair, transparent and objective. Also, about 45% of the employees have a negative perception about their working environment which may be attributed to improper working conditions such as unavailability of sufficient working area. In addition, 55% of employees were dissatisfied of the service provided by maintenance department since 50% of the laboratories have at least one disrupted instrument.

Conclusion: More involvement of the laboratory staff in decision making and improvement of both working environment and management of laboratory instruments were recommended. Moreover, the need for developing a reliable workload measurement system was recommended for better staffing decisions.

Key-Words: Workload; Perception; Medical Laboratories

Introduction

Providing good quality laboratory result is one of the high priorities at primary health care governmental medical laboratories and to ensure a high quality of laboratory services it should be well managed. Since the laboratory staff could be perceived as the most valuable asset in laboratories, they should be evaluated and distributed effectively. Leadership, management, communication, working conditions, workload, team or individual work, and education opportunities play their part in an individual's job satisfaction. Effective communication is important to achieve organizational goals. Ignorance of its importance can derail the best management efforts.

Laboratories' managers need to be interested in their employees' perceptions because perceptions give warnings of potential problems and because they influence behaviour. Satisfied and committed employees have lower rates of turnover and absenteeism. Obtaining employees feedback could be used as a management tool to improve work processes, the work environment and morale. Leadership, management, communication, working conditions, workload, team or individual work, and education opportunities play their part in an individual's job satisfaction. Effective communication is important to achieve organizational goals. Ignorance of its importance can derail the best management efforts.

Work conditions and design variables such as temperature, work space size, and interior layout and arrangement can directly influence employee satisfaction. In addition, they indirectly affect employee productivity by influencing communication and employee fatigue. Overcrowding, heavy workload, incorrectly installed and poorly-maintained equipment and...
badly-designed premises are frequent contributing factors to laboratories occupational injuries and illnesses. New employees should be adequately trained to use unfamiliar technical procedures and instruments. They should also be introduced to office and clerical procedures.

For some years there has been dissatisfaction with the existing method of assessing laboratory workload which relies on the raw total number of tests [In a conversation with the director of laboratories and blood banks (April 2009)].

The main aim of the study was to explore the perception of employees in the PHC laboratories about their workload and their working environment.

Materials and Methods

Study Design: A cross sectional study was carried out on the governmental primary health care medical laboratories in the Gaza Strip.

Study Population: All the eighty four medical laboratories employees working at MOH primary health care medical laboratories in the Gaza Strip who have technical responsibilities in the field of laboratory at the time of study comprise the study population.

Ethical Considerations: An official letter of approval obtained from Helsinki Committee , a Palestinian ethical committee”. Also, an official letter of request was obtained from the PHC Director General at MOH to conduct the study at MOH primary health care laboratories. Furthermore, each participant in the study received an explanatory letter attached to his questionnaire about the purpose of the study, confidentiality of the information and the fact that the participation is optional.

Instruments: Data had been collected using the following instruments:
1. Self-administered structured employee questionnaire was developed to get information about employees’ perception of the existing workload, staffing decisions, and working environment. The questionnaire was constructed using likert scaled questions and included open-ended and close-ended questions. Based on logic and reliability analysis, related questions were grouped under one category. The categories are listed below:
   - Essentiality of Workload Measurement
   - Existing Workload
   - Staffing decisions
   - Communication with Management
   - Laboratory Environment
   - Maintenance Department Services

2. An observational checklist used to get information about staff and working environment as relying on self-evaluation of the staff is not enough.

Statistical Analysis: Data were presented as actual frequencies, percentage, mean and standard deviation. The results of this study describe PHC employee’s perceptions about workload and working environment. Analysis was carried out using the statistical Package for Social Sciences, version 15 (SPSS). Further analysis using chi square test and examination of significance at level 0.05 was performed.

Results

This study was conducted to include the eighty four laboratory employee who had technical responsibilities at primary health care laboratories which are distributed over the five geographical districts of the Gaza Strip. The response rate was high and reached 96% of the study population which reflects employee’s concern about the subject. Figure 1 and 2 shows the distribution of study population by governorate and by laboratory level respectively.

Socio Demographic Characteristics

In this study, as described in the following table (Table 1), females represent 71.6% of the study population. The majority (93.8%) were married, and 80.7% of the subjects were below 40 years old.

Employee’s Qualification and Specialty

More than half (56.8%) of the employees hold a bachelor degree; 39.5% hold a diploma, and the remaining 3.7% have master degree (Figure 3).
Concerning their specialty, 38.3% were medical technicians, (34.6%) were medical technologists, (17.3%) were microbiologists or biochemists, and (9.9%) were of other specifications such as chemists and biologists.

**Employee’s Experience and Received training**

As summarized in Table 2, the general work experience at the field of laboratories for more than half of the employees (56.8 %) was from 5 to 15 years, while only 14.8% of the employees have more than 15 years’ experience. Regarding job title, about 26% of laboratory employees were holding managerial job titles, such as head of branch, head of sector, and supervisor. However, there was a statistically significant difference (p-value = 0.001) between males and females regarding this issue (Table 3), since only 15.5% of females were holding managerial job titles compared to 52.2% of males who were holding those titles at the time of the study. In other words, females tend to hold managerial job titles less than males by approximately six times. On the other hand, the difference between males and females concerning the years of experience in the field of laboratories didn’t reach a statistically significant difference.

During their college or university studies, only 32.1% of the employees had received educational courses related to laboratory management. However, 75% of them participated in workshops during work and only 37.7% of them participated in workshops about laboratory management. Only 32.1% of employees receive training courses about laboratory safety.
knowledge about workload measurement. The mean of employees’ perception about their existing workload was 3.29, suggesting that about 66% of employees feel that they or their colleagues were overloaded. As employees were asked about factors attributed to their overload, their answers indicate that the major attributing factors were: inadequacy of staff, increasing work intensity, the increase in paperwork, frequent equipment failure, and the absence of a clear job description. The following table (4) presents the percentage of employees who believe that the mentioned factor attributed to his/her feeling of being overloaded. Regarding staffing level and staffing decisions, the mean of subjects’ perception was 2.76, suggesting that about 55% of employees feel that staffing decisions and staffing level were fair, transparent or objective, while the other 45% don’t.

The mean of subjects’ perceptions regarding communication with management was 2.59,
indicating that about 52% of employees feel that they communicate well with their manager regarding staffing issues in contrast to the other 48% who don’t feel that they communicate well with their manager regarding this issue.

**Employees’ Perception about their Working Environment**

The perceptions of the employees with respect to their working environment, and instruments were summarized in table 6. The mean of subjects’ perception regarding their laboratory environment was 2.76, suggesting that, about 55% of employees hold positive perception about their environment in respect of being safe, healthy, comfortable, clean, and having adequate space in contrast to the other 45% who do not. The mean of subjects’ perception regarding the service of maintenance department was 2.24, suggesting that about 45% of employees feel that maintenance department works properly, while 55% don’t.

**Laboratory Working Environment**

As observed by the researcher while filling the observational checklist, laboratories vary in design and structure since they were constructed according to different specifications. The major observations were related to laboratory temperature, space, safety, and instruments. One challenge that became apparent during the assessment of space was the absence of an international agreement on the provision of work space in laboratories which had been stated in the WHO publication on safety in healthcare laboratories.\[1\] However, the researcher relied on her observation to give a rough estimation about the availability of a minimum separated area for bench working, recording and for each instrument. Observation revealed that, only 37.5% of laboratories had sufficient working area, 59.4% had sufficient area for instruments and out of the majority (93.8%) had sufficient recording area. However, those who don’t have sufficient working area use recording area interchangeably. Also observed that, 75% of laboratories don’t have air condition or have a disrupted one.

Regarding safety, it had been observed that there was no biosafety manual available at any of the laboratories under study and that 90.6% of laboratories are provided with safety boxes which used to collect sharps to be incinerated. Only 18.8% of laboratories separate their hazardous wastes from the domestic one.

<table>
<thead>
<tr>
<th>Table-5: Means of Employees Perceptions</th>
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<tbody>
<tr>
<td>Category</td>
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<tr>
<td>Essentiality of Measurement</td>
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<tr>
<td>• Workload measurement is essential for laboratory management.</td>
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<tr>
<td>• Workload measurement is essential for making decisions about staffing level and distribution.</td>
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<tr>
<td>• There is a need to have workload measurement standard.</td>
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<tr>
<td>Existing Workload</td>
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<tr>
<td>• Do you believe that you are over work loaded</td>
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<tr>
<td>• Do you believe that other staff in your laboratory are over work loaded</td>
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<tr>
<td>• Do you believe that other staff in other PHC laboratories are over work loaded</td>
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<tr>
<td>Staffing Decisions and Staffing Level</td>
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<tr>
<td>• Staffing decisions about staffing level and distribution are made objectively in my laboratory</td>
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<tr>
<td>• Staffing level and distribution in our laboratories is fair.</td>
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<tr>
<td>• Staffing level and distribution decisions are transparent.</td>
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<tr>
<td>Communication with Management</td>
</tr>
<tr>
<td>• Before staffing decision, my manager informs us about his/her plans.</td>
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<tr>
<td>• When my manager makes a decision about staffing level or distribution, he/she gives explanations about the used selection method.</td>
</tr>
<tr>
<td>• I’m able to discuss staffing related issues with my manager</td>
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</table>

Regarding laboratory instruments, half of laboratories have at least one disrupted instrument and the majority of laboratories 84% didn’t have the operation manuals for all the instruments used. Also, 84% of laboratories don’t have preventive maintenance records.

**Communication with Administration**

All laboratories rely on phone calls to communicate with management, however only 15.6% of laboratories had a telephone set. Those who didn't have a telephone set try to use telephone outside their laboratories. The
re searcher observe that 94% of laboratories communicate through official reports while 50% of the laboratories use direct communication through visiting the director of PHC laboratories in his office. In addition, all laboratories use manual recording system and none of them had a computer or a fax.

**Discussion**

**Staff Distribution and Their Characteristics**

Lab. employees hold different levels of qualifications. However, the researcher observed that employees with bachelor degree perform tasks similar to those holding diploma as well as employee who hold master degree. This indicates the absence of clear job description which was one of the managerial related items that was complained by 26% of employees while answering the open-ended question about things that they don't like. The researcher tends to agree with Barros, who pointed out the importance of assigning duties to be commensurate with employee's education, training, and experience. Barros, suggests that a highly educated and qualified staff member should not be assigned duties that someone less qualified can perform, so that over-qualified employees don't become bored, frustrated, and disgruntled.\[12\]

Regarding gender, females represent higher percentage than males in this study as 71.6% of the study population were females indicating that females are more interested in this field than males. A consistent finding with our results was reported in USA where clinical laboratory professions are female-dominated and represents about 79%, indicating that even in USA, females tend to be more interested in this field than males.\[13\]

Besides being the majority, females tend to hold less managerial job titles less males by approximately six times. This difference is considered statistically significant (p-value = 0.001). However, there were no statistically significant difference between males and females related to their years of experience (p=0.063). Seemingly, the dominating culture effect is responsible since it considers women to have less managerial capabilities and where family is the first priority for women. These findings are similar to those from the study by Thabet about managerial positions in Gaza hospitals.\[16\]

**Knowledge of Workload Measurement**

Concerning knowledge of workload measurement, only 11.3% of the study employees gave the right answer according to WHO definition. Further analysis revealed that, the difference between employees who held a managerial job titles and those who don't regarding knowledge of workload measurement was not statistically significant (p-value=0.900). Moreover, the difference in knowledge of workload measurement between employees who received managerial courses during their graduation study and who didn't was not statistically significant (p-value 0.143). Also, for the difference in knowledge of employees regarding workload measurement between employees who participated in managerial workshops during work and who didn't was statistically insignificant (p-value=0.597) suggesting that, lack of knowledge about workload measurement among employees could be attributed to the fact that educational courses or material received by employees during graduation studies or during work doesn't include topics related to this issue.

**Employees’ Perception of Workload and Staffing Decisions**

Employees’ perception about the managerial essentiality of workload measurement was positive, about 86% of them were aware of managerial essentiality of workload measurement especially for staffing related decisions. Therefore, it is expected that implementation of a workload measurement system will be supported by the majority of employees.

In this study, 66% of employees felt that they or their colleagues were over-work loaded and relate this feeling to five major factors: inadequacy of staff, increasing work intensity, increasing paperwork, frequent equipment failure and absence of clear job description.

About half of employees (55%) had positive perceptions about staffing decisions and staffing
level in the sense of being fair, transparent or objective, while the other 45% didn’t. This could be explained by the lack of a formal standard on which staffing decisions were based as “employees were roughly distributed based on the number of available staff, the number of tests performed by each laboratory and the type of laboratory whether it’s a hospital of PHC laboratory” as stated by the Director of Laboratory and Blood Banks Directorate [In a conversation with the director of laboratories and blood banks (April 2009)]. This highlights the need to develop workload measurement system that can help in planning for human recourses.

Concerning communication with management, about 52% of the employees thought that they communicate well with their manager regarding staffing issues while 48% didn’t think so. This finding could be linked to the data collected through the observational checklist, where about half of laboratories depend on direct communication with their manager through visiting his office. Seemingly, employees who work at those laboratories may express their satisfaction about communication with management. In addition, the unavailability of telephone set, computer, and Fax machine could be the reason beyond the negative perception held by 48% of employees regarding communication with management. All those aforementioned causes may hinder communication with management therefore lowering their perception about communication. This finding was also supported by the comments of 26% of employees -while answering an open ended question-who dislike some managerial related issues such as poor communication with their managers.

**Employees’ Perception of their Working Environment**

Findings regarding employees' perceptions with respect to their working environment, and instruments revealed that 45% of employees held a negative perception about their working environment. This could be explained by the improper working conditions observed by the researcher during conducting the study. An example of that is the unavailability of functioning air condition in 75% of laboratories. Moreover, about two thirds of laboratories (62.5%) who didn’t have sufficient working area at the time of the study use recoding area interchangeably. Employees' dissatisfaction with their environment was also expressed while answering the question about things that they don't like where 48% of employees complained from having inappropriate working environment such as insufficient working area, uncontrolled temperature, and laboratory design. Also, about 38% of them state that, if they were in charge, their first priority decision would be to improve working environment via providing laboratories with sufficient working area and restructuring of laboratories.

Also it was observed that, there was no bio-safety manual available at any of laboratories and that only 18.8% separate their hazardous wastes from the domestic one which raise the need for monitoring the medical waste separation and disposal.

The presence of at least one disrupted instrument in 50% of laboratories and the unavailability of the instruments operation manuals in 84.4% of laboratories, tend to be the reason behind the negative perception held by 55% of employees about the maintenance department. This perception was confirmed when 40% of employees considered some instrument related issues as frequent instrument failure and the remissness of maintenance department among things that they dislike while answering the open ended question. During her observational tour, the researcher was told by employees that they think that they didn't receive adequate training on the use of instruments, and the source of their knowledge was the experience of their colleagues. This issue also was addressed by Barros, who recommended that, every new employee should be adequately trained to use instruments.[12]

**Conclusion**

PHC Medical laboratories employees at governmental sector expressed negative perceptions about their workload and their working environment. Sixty six percent of them believed that over-workload exists in their laboratories and 45% of them had negative
perception about their working environment. Improvement of both working environment and management of laboratory instruments are essential to ensure better laboratory services. In addition, more effective communication and involvement of staff in decision making could improve employees' satisfaction. Finally, the need for developing a reliable workload measurement system was recommended for better staffing decisions.

References


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