REVIEW ARTICLE

# Factors influencing career well-being of Medical laboratory professionals: A Literature Review

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**Keywords**: Healthcare workers; Quality of Work Life, Job satisfaction, Clinical laboratory professionals;

## ABSTRACT

**Background:** Career well-being across the healthcare system worldwide is correlated with a massive occupational burden due to several emerging factors. Medical laboratory professionals (MLPs) play a key role in diagnosis, treatment planning and infection control. MLPs have undergone significant emotional and financial decline over the past decades, which has diminished job satisfaction, productivity, mental health, and retention. Despite the expectation that career satisfaction is primarily influenced by financial and emotional aspects, the existing literature on job satisfaction among medical laboratory professionals (MLPs) remains scarce.

**Objectives:** The aim of this paper is to expand knowledge through available literature on the factors influencing the career well-being of medical laboratory professionals.

**Methods:** Research articles published between 2018 and 2025 on PubMed, Google Scholar, ResearchGate, Web of Science, Scopus and ScienceDirect databases were accessed. A critical review of original experimental and observational studies addressing the career satisfaction of medical laboratory professionals was conducted to develop a narrative review. Studies that did not present relevant data and those that did not contain primary data were excluded.

**Results:** A total of 150 articles were retrieved and 19 articles were selected to study a variety of factors that contribute to MLPs' well-being, including occupational satisfaction, motivation, financial stability, job security, a favorable policy framework, benefits, career development and recognition. The main factors identified include workplace environment, workload, mental health, pay and benefits, leave policy, job security, work-life balance, professional growth and development, administrative capacity, employee retention, and turnover. This review illustrates that several factors affect the career well-being of medical laboratory staff to differing extents. The findings indicate that inadequate pay, heavy workload and limited professional development opportunities are strongly linked to low job satisfaction and increase emotional stress among laboratory professionals. These findings also highlight the importance of tailored Continuous Professional Development (CPD) programs and strong leadership to improve efficiency and staff retention.

**Conclusion:** In terms of the real-world situation, this narrative review highlights the key elements influencing medical laboratory professionals' occupational well-being. This article aims to enhance awareness among healthcare professionals regarding the most recent research findings on this topic. These findings will contribute to evidence-based practice and to the development of strategies to improve human resource management.

**Main Contribution to Evidence-Based Practice:** This article helps to raise awareness among healthcare professionals about the current level of job satisfaction among medical laboratory professionals. The findings of this research will contribute valuable knowledge to the global health sector by highlighting job dissatisfaction among medical laboratory professionals and supporting evidence-based practice.

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**What do we already know about this topic?**
Occupational burden is a common issue in the healthcare industry and is frequently experienced by medical laboratory professionals. Increased occupational burden may lead to decreased job retention in the medical laboratory sector and can negatively affect the motivation and overall quality of life of these professionals.
**What is the main contribution to Evidence-Based Practice from this article?**
This study summarizes the current situation regarding the key factors affecting the career well-being of medical laboratory professionals. The findings may help inform healthcare professionals about job satisfaction levels and support the development of strategies to enhance career satisfaction among medical laboratory professionals.
**What are this research's implications towards health policy?**
This study contributes to the development of theoretical knowledge related to clinical laboratory management, particularly in the area of human resource management. The findings may facilitate the establishment of effective human resource management programs and systems in clinical laboratories with low job satisfaction levels. Furthermore, the study can provide comprehensive management strategies applicable to both private and government hospitals.
**Authors' Contributions Statement:**
N.D.N Perera: Data processing, Validation, Manuscript writing, revising content,; B.G.A. Eranga: Documentation, Reviewing the literature; I.W.M Madushani: Reviewing the literature and editing; B.A.N. Eranda: Revising content; M.M.K. Pieris: Concept, Supervision, Revising, Management and coordination

## Introduction

Medical laboratory professionals play a crucial role in the healthcare delivery system. Providing accurate and timely test results aids in proper diagnosis. Scientific medical laboratory services introduced in the late nineteenth and early twentieth centuries, along with modern biomedical research, have accelerated the evolution of effective patient diagnosis and treatment. Rapid technological advancements, along with the increasing use of automated equipment in medical laboratories have transformed the nature of laboratory workers' employment. Consequently, their roles have transitioned from executing a limited number of simple tasks to administering a diverse array of tests with progressively sophisticated equipment and methodologies. Scientific advancements have influenced not just medicine but also medical education, particularly the training of medical laboratory workers. Educational initiatives serve as the foundation for research in a dynamic and expanding discipline such as laboratory science (Waheed et al., 2024).

Medical laboratory professionals conduct and interpret diagnostic tests that impact over 70% of clinical diagnoses. Their ability to provide precise diagnoses, efficient treatment planning and continuous disease control makes them indispensable for patient care. In addition to providing individual treatment, MLPs play a vital role in public health by reporting epidemiological findings, detecting outbreaks and conducting disease surveillance. However, despite their essential contributions, MLPs are often overlooked and undervalued within the healthcare system. These professionals, as Robinson (2024) points out, operate "in the shadow of healthcare," performing vital but frequently unrecognized and underpaid tasks. Staff shortages in the healthcare and public health workforce causes near-term and long-term effects on patient care, safety and productivity (Robinson, 2024). Job satisfaction is simply, a measure of employees' fulfillment in their job roles. The Quality of Work Life (QWL) is an important, multifaceted concept that considers employees' careers, personal lives, and organizational aspects across diverse sectors

such as government and private sectors to determine job satisfaction. It determines how well the occupation contributes to the overall quality of life. Several unique factors shared across sectors and industries contribute to the complexity of this impact. QWL has several facets focusing on the assessment of the work environment, organizational culture, relationships, cooperation, training, compensation, benefits, work satisfaction, employment, stability, autonomy, and access to resources. The level of QWL can affect staff performance and efficiency. QWL for healthcare workers varies greatly based on factors such as nation, geography, urban or rural context, and the unique obstacles faced in each healthcare setting. However, there may be some common themes affecting QWL for healthcare professionals across continents, such as inadequate health budget allocations, poor leadership and management, excessive overall workload, lack of training and support, adverse working conditions, local community issues, and the impact on professionals' personal lives. Poor working conditions and lack of recognition were identified as key factors contributing to the decline in employee well-being among healthcare workers, with some of the issues being linked to limitations in the organizational and physical work environment such as the lack of continuous professional development (CPD) opportunities, inappropriate working hours, insufficiency of vacation time, inadequate management and staffing, lack of facilities for nurses, inability to balance work with family needs (Ayalew et al., 2024). Another significant contributing factor to the poor quality of work life among healthcare workers is inappropriate work environment in terms of workplace security, lack of patient care supplies and equipment, and recreational facilities (Ayalew et al., 2024; Alrawahi et al., 2024).

According to the current situation, there are many factors affecting career satisfaction among medical laboratory professionals in the government and private healthcare sectors worldwide. These include factors such as job content fulfillment, good leadership, connections with coworkers as well as income. Despite employing people to provide public services, the public sector is not subjected to the same competitive pressures as private businesses or organizations (Moldabekov et al., 2025).

Nevertheless, guidelines for assessing the elements influencing professional satisfaction among medical laboratory scientists are not well-defined. The understanding of job satisfaction among medical laboratory workers remains inadequately assessed, leading to significant consequences in employment retention. This review aims to study the effects of factors such as workload, leave policy and work-life balance, workplace environment, mental health, pay and benefits, job security, professional growth and development, administrative capacity, employee retention, and turnover among medical laboratory professionals worldwide. This narrative review will aid in problem solving and, to some extent, increase employee retention.

## Methodology

### Search Strategy

A thorough analysis of research publications between 2018 and 2025 on medical laboratory professionals' job satisfaction was conducted using the PubMed, Google Scholar, ResearchGate, Web of Science, Scopus and ScienceDirect databases. This narrative review aims to identify and clarify the factors affecting job satisfaction among medical laboratory professionals in general. It further examines the

extent to which these factors influence job satisfaction among medical laboratory professionals and assesses mental well-being and sources of work-related stress among medical laboratory professionals. The search strategy used a combination of controlled vocabulary and free-text terms. Three groups of keywords were combined in the search strategy: (1) job satisfaction, (2) medical laboratory professionals and (3) influencing factors.

Study selection
Inclusion criteria:
1) Articles published between 2018 and 2025 timeframe according to the journal guidelines,
2) The topic of the article had to be relevant to at least one factor influencing the career well-being of medical laboratory professionals or other closely related roles.
3) All the selected articles were original experimental or observational research studies published in English.
Exclusion criteria:
1) Articles that did not contain primary data
2) Studies that did not present relevant data
2.3 Selection Process
Initially, 50 articles were identified through database searching. Following the application of the inclusion and exclusion criteria, 19 articles were included in this review.

Discussion
According to the available literature, several factors are associated with the well-being of medical laboratory professionals, including workplace environment, workload, mental well-being, compensation and benefits, leave policies, job security, work-life balance, professional growth and development, administrative capacity, and employee retention and turnover.

Workplace Environment

Medical laboratories are challenging environments where diagnostic tests are routinely performed. Medical laboratories frequently deal with contagious materials and complex technology. Laboratory workers are expected to perform tests rapidly under demanding time constraints. These demands often increase stress levels due to the workload intensity, the need for precision, and the risk of exposure to biohazards.
A survey conducted among medical technicians in South Africa specified that the overall job satisfaction was affected by various aspects of their working environment, including respect, professional recognition, supportive connections, and continuous professional development (CPD), which play a crucial role in defining their career well-being. The majority of respondents (71.9%) were satisfied with their choice to pursue a career as medical technologists in South Africa. Furthermore, 34.4% of the medical technicians reported feeling devalued, with their qualifications insufficiently recognized and experiencing a lack of respect from pathologists (Mullah et al., 2020). Another cross-sectional study conducted in Oman identified that key factors affecting MLPs included the lack of CPD programs and poor interpersonal relationships with their supervisors (Alrawahi et al., 2024). Furthermore, 74% of respondents reported stress levels exceeding 80%, primarily due to high workloads and an uncomfortable work environment, which may reduce staff performance and compromise the accuracy of test results. Collegial unity can mitigate stress associated with the work environment. Uncomfortable working conditions may negatively impact employee morale, psychological condition and productivity, ultimately affecting organizational goals. These

findings highlight the need to address the stress-related variables to facilitate the employees' well-being and organizational effectiveness (Kumareswaran et al., 2023). Swaray et al. (2021) reported that in Ghana, MLPs involved in COVID-19-related activities experienced higher levels of psychological distress (PD) than other MLPs ($p < 0.05$). The PD score was significantly higher in participants who were involved in COVID-19-related activities compared to those not engaged in such activities because people who were involved in COVID-19-related duties showed a high anxiety score and they experienced anxiety symptoms. The risk of working with inadequate personal protective equipment (PPE) while sampling from suspected or confirmed cases and deceased patients caused risks, trauma, and stress among MLPs. Laboratory consultants experienced higher stress symptoms than other positions. Age group, marital status, professional cadre, sex, and the number of children of MLPs were additional important variables linked to PD. This analysis further showed that PD was not solely due to the nature of duties but also due to the involvement in several duties. The laboratory staff had to cope with staff shortages, long working hours with heavy workload during the COVID-19 pandemic. A well-designed, supportive work environment free from health hazards promotes staff empowerment.

Workload

The daily workload of MLPs is a significant factor influencing their career well-being. Workload is strongly associated with stress, inadequate institutional policies, lack of CPD, and limited professional recognition. A survey was conducted in Korea among 650 medical technologists who were involved in blood collection (Phlebotomists). Each MLT drew blood from nearly 100 patients daily, resulting in occasional collection failures, which led to patient complaints. According to the data, among the MLTs who got injured from needle-stick wounds, only 15% of MLTs received treatment. More than half of the phlebotomists reported musculoskeletal disorders and psychological stress resulting from a continuous, excessively high workload (Park et al., 2023).

In a Malaysian cross-sectional survey, 74% of laboratory staff respondents reported more than 80% stress scores, which indicates the extent to which the workplace environment, such as workload, facilities, and assistance, led to employees' stress. Stress scores, calculated using the Stress Risk Assessment Questionnaire, demonstrated a statistically significant association between workload and emotional stress (Kumareswaran et al., 2023). Most of the selected laboratories (80.5%) received more than 100 samples daily. This finding suggests that the number of patient samples received daily could be linked to stress ratings. Workplace stress increases when deadlines coincide with heavy workloads. In large-scale laboratories, workers are assigned numerous tasks to complete within a relatively short time frame. Heavy workloads increase occupational stress and are considered predictors of emotional exhaustion. When faced with multiple tasks and tight deadlines, workers may prioritize speed over quality, leading to stress and reduced performance. When demands exceed perceived capacity, cognitive and psychological difficulties often coexist, resulting in higher error rates. Furthermore, spending more time at work affects workers' social lives and recovery. The introduction of automation in laboratory testing can reduce workload and overall stress. It has been observed that MLPs are assigned to do multiple tasks within a short period of time

frequently. Excessive workload can cause MLPs to lose focus, leading to poor performance. Unresolved workload can lead to mental and physical disorders, which may result in higher error rates among workers (Kumareswaran et al., 2023).

Organizations need to provide their managers with the necessary training and assistance to manage employees effectively. Medical laboratories require qualified staff and automated systems to provide precise results and to reduce work burden. Employees should be provided with opportunities to enhance their mental well-being through participation in entertaining or career development activities.

Mental Well-Being

Emotional, physical, and mental exhaustion resulting from chronic or excessive stress is referred to as “burnout.” A study was conducted to detect burnout among medical laboratory technologists and technicians/assistants in Ontario, Canada, which showed that several factors were associated with high burnout, such as job insecurity and conflicts in the workplace. When compared to medical laboratory technologists, technicians and assistants faced higher emotional demands and role conflicts. Furthermore, they experienced more physical and sexual harassment than the technologists (Nowrouzi-Kia et al., 2022a). During the COVID-19 pandemic in Ghana, high physiological stress, depression, and anxiety were reported among MLPs on the front line (Swaray et al., 2021).

Lack of flexible working arrangements also leads to tension or even depression among employees. Workplace stress largely depends on key factors, including excessive workload, inadequate career development, and limited interpersonal relationships. Alrawahi et al. (2024) reported that Omani citizens had higher stress scores (32.35) than non-Omani citizens working in Omani hospitals (Job stress score: 21.43, based on the Nurse Stress Index (NSI)), while showing a lower job satisfaction score ($P<0.05$). One possible explanation is that Omani staff with families bear greater social responsibilities than colleagues living alone. In addition to that, the majority of non-Omani were older than the average and were able to adjust to the work setting in the laboratories without much difficulty. Furthermore, according to Alrawahi et al. (2024), Junior MLPs showed higher job dissatisfaction than their senior colleagues. This indicates that the level of stress also depends on seniority. Older MLTs reported significantly lower stress levels (Stress Score: 17.80) compared with younger staff (Stress Score: 30.58; $p < 0.05$). This may be because younger MLTs have higher expectations than their older counterparts, and these expectations were not fully met in the laboratory environment. In the same study, males showed higher job satisfaction than females, and female professionals reported high stress levels at work. One possible reason is that male and female employees may have different work-life expectations, which could explain this disparity. Another explanation is that women have greater social responsibilities in their family life than men, which may lead to lower job satisfaction and more stress. Furthermore, higher stress levels are associated with excessive workload, inadequate safety measures, absence of a promotion system, limited training opportunities, poor supervisory relationships, and inconsistent organizational policies. In addition, employers should adopt supportive initiatives such as modification of organizational attitudes regarding job stress, avoiding the stigma associated with mental health in the workplace and developing

policies. Employers need to determine which aspects of the job roles may lead to stress at work (Alrawahi et al., 2024; Kumareswaran et al., 2023).

Compensation, Benefits, and Leave Policy

Compensation refers to the monetary benefits and other incentives that medical laboratory personnel receive based on their job positions. Additional benefits include health insurance, retirement programs, and professional development support. The leave policy establishes the regulations and legally entitled time off, including vacation, sick leave, annual leave, maternity leave, etc. Turnover is an important parameter that is used to assess how frequently employees leave the lab. This indicator is vital for the management to make sure that there is adequate staff in the lab (Novis et al., 2019). In a study conducted in Ethiopia (Dellie et al., 2019), 65.5% of MLPs reported that they intended to quit the profession due to poor salary, lack of benefits, along with restricted opportunities provided on CPDs, lack of recognition, poor stability, personal matters and heavy workload. Highly satisfied professionals may perceive that leaving supportive organizations would reduce opportunities that are difficult to find elsewhere. Among participants, most were dissatisfied with pay (3.89-fold increased risk), while dissatisfaction was also reported due to limited educational opportunities (3.59), poor working conditions (2.77), being unmarried (2.46), and high workload (1.95). This could be due to high workload- associated pressure and benefits offered by other occupations. Another explanation is that poor working conditions or a lack of necessary workplace infrastructure, such as insufficient sanitation, inadequate lighting, furnishings, restrooms, and other health and safety requirements might hinder staff retention. MLPs with high workloads were more likely to leave their organizations, as excessive workload induces stress and exhaustion, prompting them to seek employment elsewhere. Highly committed employees strive to manage themselves effectively and remain in their positions (Dellie et al., 2019). Furthermore, high turnover occurs due to fewer opportunities for promotion, poor interrelationship with other colleagues and detachment from their responsibilities as well (Al-Qathmi & Zedan, 2021; Alrawahi et al., 2024).

According to Al-Qathmi & Zedan (2021), the most vulnerable factor affecting turnover was the salary allocation, shown by 51% among 100 medical laboratory technologist respondents, followed by low annual or periodic increments (48%). Compared to younger workers, older workers with higher job experience shown higher levels of motivation and engagement. This emphasizes the need for personalized incentive schemes that can address both work-related and personal requirements in order to improve satisfaction and minimize turnover rates. To enhance motivation among MLTs, it is essential to provide CPD opportunities, increase salaries, offer additional vacation time, encourage supportive peer networks, reduce working hours, and promote strong workplace ethics (Al-Qathmi & Zedan, 2021).

In a study conducted by Novis et al. (2019), on laboratory staff turnover rates at several institutions in the USA, a median three-year turnover rate of 16.2% was reported among all laboratory workers, with phlebotomists exhibiting the highest turnover (24.9%). Among laboratory departments, microbiology reported the lowest turnover (7.8%), whereas pathology reported the highest (14.3%). It was also found that implementing strong career pathways and funding for external CPD activities reduced turnover rates by 3.3% and 3.6%, respectively

when compared to institutions that did not implement these strategies. Human resource management (HRM) procedures were not significantly associated with the three-year average laboratory worker turnover rate. In the same study, 15% of participants (3 of 20) agreed that establishing and communicating clear career pathways was the most effective practice, whereas none considered funding external continuing education an effective retention strategy. Several times participants answered ''unknown'' to survey questions on laboratory and institutional HR procedures. This suggests that laboratory managers and healthcare directors need to increase awareness of their institutions' human resources processes. Individuals working in high-turnover laboratories may benefit from learning about their institutions' HR practices and how they impact turnover rates.
As a strategic policy, the HR managers should not consider only employees' skills when recruiting but should also pay attention to the organization's capacity for job retention and employee motivation to create a productive healthcare system. Turnover rates can be significantly reduced through a well-structured strategic incentive system that fosters employee commitment and motivation.

Job Security and Work-Life Balance

Job security for medical laboratory workers refers to the assurance of stable, ongoing employment that provides a consistent income and long-term career prospects. Work-life balance is essential for performing professional duties efficiently while maintaining personal and family commitments, thereby supporting overall physical and mental health. A study conducted in Canada reported that during the COVID-19 pandemic, increased job insecurity significantly contributed to burnout, with a prevalence of 72.3% among Medical Laboratory Technologists. Workplace conflicts, stress, workplace violence, and long working hours are also major contributors to exhaustion (Nowrouzi-Kia et al., 2022b). Imbalances between personal and professional life contribute to psychological exhaustion and job dissatisfaction. MLTs with higher job satisfaction exhibited lower levels of burnout (Alrawahi et al., 2024).

Professional Growth and Development

Medical laboratory personnel must continuously enhance their knowledge, skills, and competencies to provide high-quality laboratory services and support their career development. In a cross-sectional study carried out in Ethiopia, 51% of the medical laboratory professionals reported that they had not participated in any CPD programs. The majority of the participants considered CPD an important part of their career. Approximately 45.2% of the participants indicated that continuing professional development (CPD) was beneficial for them to renew their licenses and acquire necessary knowledge and abilities that were not covered in basic training (Negussie et al., 2025).
However, operational issues may impede participation in CPD programs. Barriers to attending CPD events include night shifts, lack of company support (e.g., no special leave or money), family commitments, scheduling issues, and geographical limits. Restricted access to CPD may compromise professional development and long-term job success (Mullah et al., 2020). Another study conducted in Ghana included 316 medical laboratory professionals and examined their CPD needs. The most prioritized topics for Continuing Professional Development (CPD) training included quality management systems

(mean = 80.59 ± 9.02), pathophysiology, data interpretation, and research (mean = 78.0 ± 6.97), technical competence (mean = 73.97 ± 10.65), and laboratory management, leadership, and coaching (mean = 72.82 ± 9.72). However, social and infrastructural constraints, such as a lack of awareness of legal CPD requirements and weak support and encouragement from the institution, limited their capacity to participate in the training. Improvements in policy, financial support, logistics, time management, organizational structure, and delivery formats need to be considered to enhance CPD standards (Essuman et al., 2023). Furthermore, according to Essuman et al. (2023), medical laboratory professionals' training needs were influenced by factors such as workplace, work experience, previous attendance in CPDs, supervisory positions, and the number of employees supervised. Among the participants, financial expenses (67.7%) and workload/time constraints (51.8%) were identified as the main barriers to participation in CPD events. It was also mentioned that the preferred methods of CPD delivery were face-to-face presentations, training workshops, and hands-on workshops. In a study conducted by Ndlovu et al. (2024), which examined the relationship between CPD involvement and job satisfaction, high levels of CPD participation were significantly associated with job satisfaction ($p = 0.02$). Attendance differed significantly by qualification level ($p < 0.05$), having diploma holders attending more CPD sessions. Awareness of CPD programs was linked to higher participation rates ($p < 0.05$). Perceptions on relevancy, effectiveness and point awarding did not significantly impact participation levels. Employers' and environmental characteristics associated with high participation in CPD programs included cost ($p < 0.05$), employers' sponsorship ($p < 0.05$), and understanding of legal obligations ($p < 0.05$). There was no significant correlation between internet access or employment location (urban vs rural) and participation in CPD programs. Factors linked to the level of participation in CPD programs included cost, employers' support and the lack of awareness on legal requirements for their participation. This study highlights the importance of facilitating CPD by providing customized programs according to their needs.

In an Ethiopian study conducted using 457 MLPs the main priority areas identified for CPD were 'health and emerging technology, computer skills, and medico-legal issues'. The most preferred technical fields for training were microbiology, clinical chemistry, and molecular diagnostics. Furthermore, under research skills, they preferred topics including manuscript preparation and grant proposal writing. The majority of participants prioritized technical skills over certification, accreditation, and quality because this study was performed after COVID, when MLPs needed a lot of training to fulfill the training gap, rather than fulfilling the knowledge gaps for the accreditation process (Gebregzabher et al., 2023). Conducting a needs assessment may provide useful information for CPD providers, accreditors and course developers on which priority areas need to be selected for designing and delivering CPD courses to medical laboratory professionals. This is essential for the standardization and implementation of the CPD.

In most cases, medical laboratory professionals have to travel to specified centers to attend training sessions. There is a need to organize cost-effective events that are easily accessible. Today, CPD can be accessed through many channels, such as in-house lectures, short courses, webinars, quality assurance programs, and journal clubs. CPD providers, sponsors and course coordinators need to focus precisely on

when to deliver CPD courses and which areas to be covered for MLPs. Procedures and funding have to be provided to encourage staff to attend regional and international conference/workshops (Ndlovu et al., 2024). Nowadays, internet-based, AI-driven platforms are preferred over conventional methods. However, limited or unstable internet connections and inadequate IT skills may hinder the use of internet-based platforms for CPD delivery.

Administrative Capacity

Medical laboratory professionals require skills to successfully manage and organize non-clinical and operational roles within a medical laboratory. Furthermore, these roles also encompass leadership, managerial, and strategic decision-making duties to ensure that the laboratory functions smoothly and efficiently in accordance with established standards. According to Mesganaw et al. (2023), the implementation of quality management practices among medical laboratories in Ethiopia remains limited. The main factors compromising quality were issues related to laboratory professionals, inadequate support from management bodies, high workload, and limited access to on-the-job training. Therefore, all responsible stakeholders should focus on implementing Quality Management Systems that are applicable to all medical laboratories. To improve the competency, accuracy, precision, and cost-effectiveness of MLS services, a robust quality management system should be established, comprising appropriate quality control, quality assurance, accreditation, and quality assessment. Administrative discrepancies lead to poor coordination, resource wastage, and lack of accountability. Formal training programs in laboratory administration, policy frameworks for leadership positions, enhanced supervision systems, and defined career paths for administrative roles should be established to strengthen the administrative capacity of MLPs (Chaturvedi et al., 2023). To enhance the efficient delivery of lab services, investing in leadership development, standardizing administrative procedures, and establishing more inclusive and accountable management systems is suggested.

Conclusion

Medical laboratory professionals should be aware of the factors contributing to their career satisfaction and job retention. The main finding of the reviewed literature is that job satisfaction depends on multiple factors, including workplace environment, workload, mental well-being, compensation and benefits, leave policy, job security, work-life balance, professional growth and development, administrative capacity, and employee retention and turnover. Most importantly, emotional factors make a major contribution to job satisfaction, including stress associated with heavy workloads and motivation, which is governed by the mental well-being of medical laboratory professionals. Since individuals are motivated by different factors, it is the responsibility of lab managers to identify these factors and appropriately address their concerns to increase job satisfaction and retention. Many studies have been conducted in high-income countries, whereas research from low-income regions such as Southeast Asia, Africa, and Latin America remains limited. It is crucial to conduct research to assess the impact of policy changes as well. This review indicates that the lack of career development programs diminishes job satisfaction; therefore, a substantial portion of profits should be allocated to career development initiatives. Salary scales need to be standardized based on

the number of samples processed per hour in non-hospital laboratory settings and according to the number of working hours in hospital laboratory settings. Retention of laboratory professionals is significantly affected by inadequate compensation and limited opportunities for professional growth. Enhancing workforce competency and satisfaction requires facilitating continued professional development (CPD) through customized programs that target particular staff needs. Additionally, establishing inclusive and responsible management structures, standardizing administrative procedures, and strategically investing in leadership development are necessary to improve the effectiveness of laboratory services. To create a functional healthcare system, human resource managers must focus on the organization's capacity to retain employees.

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