Factors affecting job satisfaction and retention of Medical Laboratory Professionals in Ghana

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Abstract:
Job satisfaction and retention assessments have been widely used to assess employees' job contentment, affection, and motivation in institutions including the health sector. However, these evaluations are missing in Ghana, particularly among the medical laboratory fraternity. Thus, this study assessed the factors that influence job satisfaction and job retention among medical laboratory professionals in Ghana. An online self-administered questionnaire was used to collect data from the medical laboratory professionals from August 2022 to September 2022. Out of the 500 questionnaires administered by email and text message, 432 medical laboratory professionals successfully responded to the questionnaires. Descriptive, bivariate, and multivariate analyses were performed with Stata version 16.0. Statistical significance was considered at a P-value of less than 0.50. A total job dissatisfaction rate of 66.2% was recorded. This was made up of 18.5% very dissatisfied professionals and 47.7% dissatisfied professionals. Most respondents had an imbalanced work and personal life (52.8%). About 59.7% of the professionals had intentions of leaving their jobs. Lack of appreciation (42.8%), respect (36.4%), and recognition (18.5%), lack of safety at work (47.9%), bad relationships with managers (12.7%), poor annual appraisal (21.5%), poor salaries (89.8%), lack of professional autonomy (77.3%), lack of professional development opportunities (77.1%), and lack of staff accommodation (75.5%) resonated as factors of poor job satisfaction. Lack of appreciation (52.6%), poor working conditions (57.9%), and a lack of benefits (68.8%) contributed to their attrition tendencies. A broader stakeholder consultation is needed to improve job contentment and motivation among the medical laboratory fraternity in Ghana.

Key words: job satisfaction; job retention; quality of life; Medical Laboratory; Ghana

Introduction

The World Health Organisation's (WHO) global strategy on human resources for health seeks to optimize health staff performance and quality of work towards the achievement of the health and health-related Sustainable Development Goals by 2030 (WHO, 2016). However, healthcare workers worldwide continue to suffer poor personal well-being (PW), quality of life (QoL), and quality of work life (QoWL) (Awosoga et al., 2022; Kandula & Wake, 2021; Kumar et al., 2018; Woon et al., 2021). Although they face challenges in healthcare systems, they continue to provide quality and accessible healthcare to patients (Kumar et al., 2018). Above all, they ensure patients' satisfaction and prompt recovery of their ailments. The COVID-19 pandemic exacerbated the level of maintained QoL among the majority of health professionals (Afulani et al., 2021; Gupta et al., 2021; Kandula & Wake, 2021). Health professionals suffered from stress disorders, stigma, suicidal tendencies, burnout, financial difficulties, infections, and even death (Chang, 2022; Gupta et al., 2021; Konlan et al., 2022; Lin et al., 2022; WHO, 2021). However, most were either left unnoticed or overlooked (Beusekom, 2020; Dollemore, 2021). Healthcare workers in low- and middle-income countries (LMICs), particularly in sub-Saharan Africa (SSA), may be worse hit. Despite their high commitment and productivity, healthcare workers reported poor perceived personal and work-related well-being in studies and reports. For instance, a study in Southwest Nigeria demonstrated poor PW, QoL, and QoWL (54.7%, 56.1%, and 61.6%, respectively) among health professionals (Awosoga et al., 2022). Another study reveals that only 3% of global healthcare professionals work in Africa (van de Klundert et al., 2018). In Southwest Ethiopia, about 45.9% of healthcare staff left the service in five (5) years for various reasons (Gesesew et al., 2016). The WHO revealed a significant health workforce shortage, inequitable distribution of the healthcare workforce, poor workforce working conditions, and poor health workforce policies and planning in the WHO African region (WHO Africa, 2021). However, it may not be statistically prudent to generalize since some SSA countries may be better off than others (Blaauw et al., 2013).

Diagnostic investigations are crucial to public health. They guide the disease diagnostic process, influence patient care, and provide valuable data for research and policy direction for effective and accessible intervention programs (Balogh et al., 2015). Ultimately, early detection of diseases provides linkage to care, reduces the cost of care, and improves the disease prognosis (Elsink et al., 2020; Lee et al., 2004). Medical laboratory professionals play a central role in the clinical diagnostic process. They perform timely and evidence-based differential diagnoses, monitor disease progression, and provide prognostic information to guide the patient recovery process (ASCLS, 2022; CSMLS, 2022; MCCMS, 2022). In addition, they play pivotal roles in disease surveillance, epidemic management, and control programs. Though they are often referred to as the "hidden everyday heroes" in healthcare systems (Campbell, 2011; Leal, 2022; Rohde & Noblit, 2016; Utzig, 2022), COVID-19 shined a spotlight on their expertise (Gohar & Nowrouzi-Kia, 2022; M. Uchejeso et al., 2021; Will, 2022). However, medical laboratories in Low and Middle-Income countries (LMICs), particularly in SSA, face challenges in human resources, supply chain management, staff motivation, capacity building, career development, and progression (Alrawahi et al., 2019;

Marinucci et al., 2013).

Job satisfaction informs the level of contentment and pleasurable emotions employees or staffs of an organization have concerning their job (Ćulibrk et al., 2018). On the other hand, job retention creates concerns for employers as they inform the probability for employees to stay or quit their jobs (Bhattacharya & Ramachandran, 2015; Moore et al., 2021; Sija, 2022). Largely job retention is influenced by the level of satisfaction of the employee (Moore et al., 2021). As a metric, the rate at which employees leave their jobs determines the staff attrition rate of that organization (Tekle et al., 2022). Several job satisfaction and retention evaluations exist in Ghana for various professional groups, including nurses and midwives (Atitsogbui & Amponsah-Tawiah, 2019; Boafo, 2018; Boateng et al., 2022; Coudounaris et al., 2020; Poku et al., 2022), opticians (Akuffo, Asare, et al., 2021), and physicians (Opoku & Apenteng, 2014). These groups demonstrate varying levels of job satisfaction and attrition tendencies, which account for most of the perennial shortage of healthcare professionals in the country. Some factors affecting their perceived job satisfaction and job retention include inefficient and inequitable distribution of healthcare workers, which leads to overwork and staff burnout, poor salaries, a lack of career development policies, and an inconvenient working environment (Akuffo, Agyei-Manu, et al., 2021; Akuffo, Asare, et al., 2021; Asamani et al., 2021; Atitsogbui & Amponsah-Tawiah, 2019; Coudounaris et al., 2020; Odonkor & Frimpong, 2020; Opoku & Apenteng, 2014). However, there is no information on the evaluation of medical laboratory professionals' job satisfaction and retention in Ghana. In this survey, we established the levels of job satisfaction and attrition tendencies among medical laboratory professionals. In addition, we assessed the factors affecting their job satisfaction and job retention.

Methodology

Study design and data collection procedures

This cross-sectional survey was conducted from August 2022 to September 2022. A 39-itemized online questionnaire was adapted from the validated Copenhagen Psychosocial Questionnaire third edition (COPSOQ III) (Burr et al., 2019; Llorens et al., 2019). The COPSOQ III questionnaire helps to assess staffs' psychosocial status and organizational development using metrics such as work demands; job content and workload management; job satisfaction, job retention tendencies, interpersonal relations; professional development and leadership; health and personal well-being, among others. The questionnaire was embedded in a Google Form and administered in English to the medical laboratory professionals. Over 500 questionnaires were administered to medical laboratory professionals by email and WhatsApp messages. Out of these, 432 medical laboratory professionals successfully responded to the questionnaire. This gave a response rate of 86.4%. The questionnaire included questions on socio-demographic information, work environment, job requirements, job satisfaction, and job attrition.

Sample size determination

Assuming a 50% job satisfaction rate among medical laboratory professionals and a 10% non-response rate, the minimum required sample size for the study was 428. This was estimated with the Cochrane sample size formula (Uakarn et al., 2021).

$n \geq (z_{(\alpha/2)}^2 P(1-P))/d^2$

n= Minimum sample size

Z = Z score= 1.96
P = Pre-determined job satisfaction rate of 50%
d= precision of estimate or marginal error=5%

n≥(〖1.96〗 ^2 x 0.5(1-0.5))/ 〖0.05〗 ^2

n≥ 385
Assuming a 10% non-response rate
n≥385/(1-0.1)
n≥428

Inclusion criteria

The study included:

1. All medical laboratory professionals in all levels of healthcare delivery facilities
2. All medical laboratory professionals in academia and research institutions
3. All medical laboratory professionals in both public and private institutions

Exclusion criteria

The study excluded:

1. Retired medical laboratory professionals
2. Interns

Measured variables

The outcome variable, job satisfaction, was measured with a single question: "How satisfied are you with your job as a medical laboratory professional?" Responses were collected on a 4-point Likert scale, thus: very dissatisfied, dissatisfied, satisfied, and very satisfied. However, detailed questions on job satisfaction were asked to better understand the reasons behind participants' perceived job satisfaction rates.

Job retention, as an outcome variable, was measured by asking a general question: "Do you have intentions of leaving your job?" The expected responses were binary (yes or no). However, further questions were asked to better understand the reasons for possible job attrition. This was ascertained by asking questions on the possibility of leaving the job due to geographic relocation, excessive workload, lack of appreciation or recognition, poor working conditions, and lack of benefits.

Predictor variables included socio-demographic information such as age, sex, professional grade, marital status, number of children, region of the workplace, location of the workplace, practice setting, and level of the facility.

Data Analysis

The data was cleaned to remove duplicate and incomplete responses. For analysis, data was exported to Stata statistical software version 16.0 (StataCorp, 2019, p. 16). Descriptive analysis was performed to demonstrate the general distribution of the data, including frequencies, means, and standard deviations. Bivariate analysis using a two-sample t-test with equal variances and a one-way analysis of variance (ANOVA) compared the means of independent variables, thus indicating the manpower and the mean salaries of the different cadres of medical laboratory professionals across the various levels of facilities. Multivariate analysis using adjusted and unadjusted multinomial logistic regression models was performed to predict the factors that influence job satisfaction and high job attrition rates among medical laboratory professionals. Statistical significance was considered at a P-value of less than 0.50. All statistical results were presented in tables.

Findings

Descriptive statistics on socio-demographic information

As displayed in Table 1, majority of the

respondents were between the ages of 30 and 45. This represented 54.6% of the study participants. Males formed the majority of respondents (80.6%). About 62.7% of the study respondents practiced with a Bachelor of Science degree, whereas 78.0% practiced with the professional grade of Medical Laboratory Scientist. This represented the majority of the study's respondents. The majority of the practitioners were single (50.9%). About 55.8% had no children.

Table 1. Descriptive statistics on socio-demographic information

Variable	**Frequency (%) N= 432**
Age (years)	
<30	184(42.6)
30-45	236(54.6)
46-60	12(2.8)
Sex	
Male	348(80.6)
Female	84(19.4)
Highest education level	
Certificate	22(5.1)
Diploma	55(12.7)
Bachelor of Science	271(62.7)
Doctor of Medical Laboratory Science	23(5.3)
Masters	59(13.7)
Ph.D.	2(0.5)
Current professional grade	
Medical Laboratory Assistant	27(6.3)
Medical Laboratory Technician	64(14.8)
Medical Laboratory Scientist	337(78.0)
*Other	4(0.9)
Marital status	
Single	220(50.9)
Married	207(47.9)
Divorced	4(1.0)
Widowed	1(0.2)
Number of children	
0	241(55.8)
1	57(13.2)
>1	134(31.0)

*Other: Medical laboratory professionals in academia and research institution

Descriptive statistics according to the work environment

Table 2 displays the descriptive statistics according to the work environment of the respondents. Most of the study respondents came from the southern

regions of Ghana (63.3%). For this study, these regions included the Western, Western North, Central, Greater Accra, Volta, and Eastern regions of Ghana. However, 26.9% had their facility of practice located in rural communities. Only 16.7% of the respondents received accommodations from their employers. The Government of Ghana was the biggest employer among the respondents (54.6%), followed by the Christian Health Association of Ghana (CHAG). They contributed 19.9% of their employment. District hospitals produced the highest number of respondents (42.6%). About 65.9% of the respondents practiced in an all-in-one laboratory with clinical and diagnostic services as the main routine task.

Table 2. Descriptive statistics according to the work environment

Variable	**Frequency (%), N= 432**
Region of workplace	
Northern Ghana	44(10.2)
Central Ghana	123(28.5)
Southern Ghana	265(61.3)
Location of workplace	
Rural	116(26.9)
Urban	316(73.1)
Accommodated in Employer's bungalow	
Yes	72(16.7)
No	360(83.3)
Practice setting	
Academic	7(1.6)
CHAG	86(19.9)
Government	236(54.6)
NGO	2(0.5)
Private	85(19.7)
Quasi-Government	16(3.7)
Level of facility	
District hospital	184(42.6)
Health Centre	89(20.6)
Polyclinic	6(1.4)
Regional hospital	41(9.5)
Teaching hospital	67(15.5)
Psychiatric hospital	2(0.5)
Not applicable	43(9.9)
Current department	
All-in-one laboratory	285(65.9)
Biochemistry	26(6.0)
Blood bank	16(3.7)
Hematology	39(9.0)
Immunology	5(1.2)
Microbiology	39(9.0)

Molecar	3(0.7)
Pathology	2(0.5)
Management and supervision	4(0.9)
Supporting Staff	7(1.6)
Not applicable	6(1.4)
Routine task areas*	
Academia	28(6.5)
Logistics/ supplies	35(8.1)
Research	21(4.9)
Clinical/ diagnostics	403(93.3)
Management	7(1.6)

*Multiple responses; individual within group percentages

Descriptive statistics according to the job requirement

Table 3 shows the descriptive statistics according to the job requirement. The majority of the practitioners had 1 to 3 years of work experience (35.4%). About 33.1% work more than the required 40 hours a week. Most facilities run a shift staff system (71.8%) with a staff strength of more than 3 in the morning (36.1%), 2 to 3 in the afternoon shift (37.0%), and 1 at night (44.2%). About 72.9% admitted they receive 1 to 2 rest days a week. Most of the respondents had permanent job appointments (80.3%). However, the current job was the first job appointment for a majority of the respondents (60.9%). Approximately 38.2% had been unemployed for more than 12 months after finishing school and completing the 12-month mandatory internship.

Table 3. Descriptive statistics according to the job requirement

Variable	**Frequency (%), N= 432**
Work experience (years)	
<1	47(10.9)
1-3	153(35.4)
4-9	112(25.9)
>9	120(27.8)
Working hours per week	
≤40 hours	289(66.9)
>40 hours	143(33.1)
Shift system	
Yes	310(71.8)
No	122(28.2)
Staff strength per morning shift	
1	31(7.2)
2-3	133(30.8)
>3	156(36.1)
Do not run shift	122(25.9)

Staff strength per afternoon shift	
1	130(30.1)
2-3	160(37.0)
>3	22(5.1)
Do not run shift	120(27.8)
Staff strength per night shift	
1	191(44.2)
2-3	32(7.4)
>3	3(0.7)
Do not run shift	206(47.7)
Number of off duties per week	
1-2 days	315(72.9)
3-4 days	22(5.1)
>4 days	14(3.2)
None	81(18.8)
Type of work appointment	
Permanent	347(80.3)
Casual	36(8.3)
Locum/Contract	25(5.8)
Intern	8(1.9)
NABCO	10(2.3)
Voluntary	6(1.4)
First job appointment	
Yes	263(60.9)
No	169(39.1)
Duration of unemployed status before first job appointment	
Less than 3 months	127(29.4)
3-6 months	79(18.3)
7-12 months	61(14.1)
>12 months	165(38.2)

Descriptive statistics according to job satisfaction

When asked the general perceived job satisfaction question, a total job dissatisfaction rate of 66.2% was established (Table 4). These were made up of 18.5% of very dissatisfied professionals and 47.7% of dissatisfied professionals. Most respondents had an imbalanced work and personal life (52.8%). About 72.9% of the respondents were assured of job security. The majority admitted to choosing the profession out of passion and an interest in saving lives. Some practitioners had taken up side jobs (14.4%). About 48.6% were willing to change their profession, whereas 72.9% were not satisfied with their current facility and were willing to change facilities. Some respondents were not satisfied with their professions and jobs because they are not recognized (18.5%), not appreciated (42.8%), and not respected (36.4%). About 47.9% admitted they were not safe at their

workplace, 12.7% had a bad relationship with their managers, and 21.5% were not satisfied with their annual appraisal from their managers. The majority were not satisfied with their salaries (89.8%), the autonomy of their profession (77.3%), the professional development opportunities (77.1%), or their current means of accommodation (75.5%).

Table 4. Descriptive statistics according to job satisfaction

Variable	**Frequency (%), N= 432**
General job satisfaction perception	
Very dissatisfied	80 (18.5)
Dissatisfied	206(47.7)
Satisfied	122(28.2)
Very Satisfied	24(5.6)
Good work-life balance	
Yes	204(47.2)
No	228(52.8)
Job security	
Yes	315(72.9)
No	77(17.8)
Maybe	40(9.3)
Reason for choosing medical laboratory science*	
Influence of friends and family	42(9.7)
Passion/ interest	313(72.5)
No other choice	26(6.0)
Readily available job	34(7.9)
To earn a good income	23(5.3)
Side jobs	
Yes	62(14.4)
No	370(85.6)
Willingness to change profession	
Yes	210(48.6)
No	222(51.4)
Willingness to change facility	
Yes	315(72.9)
No	117(27.1)
Profession recognition	
Yes	167(38.7)
No	80(18.5)
Sometimes	185(42.8)
Profession appreciation	

Yes	90(20.8)
No	185(42.8)
Sometimes	157(36.3)
Respect for the Profession	
Yes	93(21.5)
No	157(36.4)
Sometimes	182(42.1)
Workplace safety	
Yes	225(52.1)
No	207(47.9)
Good working relationship with managers	
Yes	377(87.3)
No	55(12.7)
Satisfaction with an annual appraisal from managers	
Yes	210(48.6)
No	93(21.5)
Not applicable	129(29.9)
Satisfaction with salary	
Yes	44(10.2)
No	388(89.8)
Satisfaction with the autonomy of the profession	
Yes	98(22.7)
No	334(77.3)
Satisfaction with professional development opportunities at the facilities	
Yes	99(22.9)
No	333(77.1)
Satisfaction with current means of accommodation	
Yes	106(24.5)
No	326(75.5)

*Multiple responses; individual within group percentages

Descriptive statistics according to job attrition

In general, 59.7% of the professionals have intentions of leaving their jobs (Table 5). Lack of appreciation (52.6%), poor working conditions (57.9%), and a lack of benefits (68.8%) contributed to the attrition tendencies among the respondents according to their previous work experiences.

Table 5. Descriptive statistics according to job attrition

Variable	Frequency (%) N=432
Attrition possibility in general	
Yes	258(59.7)
No	174(40.3)
Relocation	
Yes	148(34.3)
No	284(65.7)
Excessive workload	
Yes	126(29.2)
No	306(70.8)
Lack of appreciation/ recognition	
Yes	227(52.6)
No	205(47.4)
Poor working condition	
Yes	250(57.9)
No	182(42.1)
Lack of benefits	
Yes	297(68.8)
No	135(31.2)

Table 6 gives the staff strengths at the respective facility levels. There was a statistically significant difference (P-value = 0.012) in the mean staff strength among the various laboratory staff cadres at the health centers, namely medical laboratory assistants (1.2±0.80), medical laboratory technicians (2.3±3.62) and medical laboratory scientists (3.5±2.69).

Staff strength at the respective facility-levels

Table 6. Staff strength at the respective facility-levels

Variable	Mean No. of staff ±SD	P-value
District Hospital		0.836
Medical Laboratory Assistant	7.1±4.53	
Medical Laboratory Technician	8.6±4.52	
Medical Laboratory Scientist	8.0±5.65	
Health Center		**0.012**
Medical Laboratory Assistant	1.2±0.80	
Medical Laboratory Technician	2.3±3.62	
Medical Laboratory Scientist	3.5±2.69	

Polyclinic		0.417
Medical Laboratory Assistant		
Medical Laboratory Technician	1.7±2.08	
Medical Laboratory Scientist	3.7±3.21	
Regional Hospital		0.493
Medical Laboratory Technician	6.3±4.71	
Medical Laboratory Scientist	8.0±7.46	
Teaching Hospital		0.998
Medical Laboratory Technician	10.7±7.01	
Medical Laboratory Scientist	10.7±11.79	

Mean salary allocation for Medical Laboratory Professionals

Also, we recorded a statistically significant difference in the salary structure (in Ghana cedis) of the laboratory ranks in CHAG facilities [medical laboratory assistants (1250.0±70.71), medical laboratory technicians (1829.8±459.73), medical laboratory scientists (2395.7±882.09), P-value = 0.012]; government facilities [medical laboratory assistants (1120.0±437.09), medical laboratory technicians (1815.4±703.15), medical laboratory scientists (2377.9±935.21), P-value<0.001]; and private facilities [medical laboratory assistants (532.0±297.43), medical laboratory technicians (750.0±70.71), medical laboratory scientists (1404.3±950.14), P-value<0.001] (**Error! Reference source not found.**).

Table 7. Mean salary allocation for Medical Laboratory Professionals

Variable	**Mean salary (GHS) ±SD**	**P-value**
CHAG		**0.012**
Medical Laboratory Assistant	1250.0±70.71	
Medical Laboratory Technician	1829.8±459.73	
Medical Laboratory Scientist	2395.7±882.09	
Government		**<0.001**
Medical Laboratory Assistant	1120.0±437.09	
Medical Laboratory Technician	1815.4±703.15	
Medical Laboratory Scientist	2377.9±935.21	
Private		**<0.001**
Medical Laboratory Assistant	532.0±297.43	
Medical Laboratory Technician	750.0±70.71	
Medical Laboratory Scientist	1404.3±950.14	
Quasi-Government		0.611
Medical Laboratory Assistant	1200.0±0.00	
Medical Laboratory Technician	2200.0±0.00	
Medical Laboratory Scientist	3348.5±2264.16	

Predictors of Job satisfaction

We predicted the factors that influence job satisfaction among medical laboratory professionals (Table 8). The older respondents, between 46 and 60 years old, were approximately six times more likely to be satisfied with their jobs than the younger respondents, less than 30 years old [OR, 95%CI 5.93 (1.06–33.21), P value = 0.043]. Factors such as marriage, children, and rural settlement accounted for poor job satisfaction among the respondents. However, these were not statistically significant [AOR, 95% CI: 0.26 (0.02-3.82), P-value = 0.328], [1.28 (0.06-27.68), P-value = 0.874], and [0.78 (0.17-3.65), P-value = 0.751], respectively. Married respondents were 55% less likely to be satisfied with their jobs compared to those who were single; those with more than one child were 23% less likely to be satisfied; and rural dwellers were 15% less likely to be satisfied with their jobs. Government workers were 96% less likely to be satisfied with their jobs. This was statistically significant at a P-value less than 0.05 [AOR, 95%CI: 0.04 (0.01-0.89), P-value = 0.042].

Table 8. Predictors of Job satisfaction

Variable	Unadjusted model		Adjusted model*	
	OR (95%CI)	p-value	AOR (95%CI)	P-value
Age (years)				
<30	1		1	
30-45	0.25(0.05-1.27)	0.095	0.43(0.06-3.16)	0.406
46-60	5.93(1.06-33.21)	**0.043**	11.85(0.58-241.03)	0.108
Sex				
Male	1		1	
Female	2.85(0.79-10.34)	0.111	3.31(0.78-14.11)	0.105
Professional grade				
Medical Laboratory Assistant	1		1	
Medical Laboratory Technician	0.84(0.07-9.66)	0.888	1.18(0.09-15.50)	0.901
Medical Laboratory Scientist	0.47(0.05-4.06)	0.494	0.43(0.04-4.19)	0.465
Marital status				
Single	1		1	
Married	0.45(0.11-1.75)	0.249	0.26(0.02-3.82)	0.328
Number of children				
0	1		1	
>1	0.77(0.19-3.01)	0.742	1.28(0.06-27.68)	0.874
Region of workplace				
Northern Ghana	1		1	
Central Ghana	1.04(0.09-11.82)	0.975	2.84(0.14-57.73)	0.496

Location of workplace				
Urban	1		1	
Rural	0.85(0.22-3.36)	0.820	0.78(0.17-3.65)	0.751
Practice setting				
Academic	1		1	
CHAG	0.54(0.05-5.57)	0.606	0.68(0.04-10.21)	0.778
Government	0.06(0.01-1.07)	0.056	0.04(0.01-0.89)	**0.042**
Private	0.94(0.10-8.60)	0.954	-	
Level of facility				
District hospital	1		1	
Health Centre	3.59(0.84-15.38)	0.085	4.33(0.69-26.85)	0.115
Regional hospital	1.51(0.15-14.88)	0.725	-	

*model adjusted for Age, Sex, professional grade, marital status, and number of children

Predictors of Job attrition due to poor working conditions and lack of benefits

Likewise, Table 9 illustrates the predictors of job attrition due to poor working conditions and a lack of benefits. Due to poor working conditions and a lack of benefits, medical laboratory technicians, medical laboratory scientists, CHAG and government facilities, and polyclinics all contributed to high attrition. However, these findings were not statistically significant at a P-value less than 0.05.

Table 9. Predictors of Job attrition due to poor working conditions and lack of benefits

Variable	**Unadjusted model**		**Adjusted model***	
	OR (95%CI)	**p-value**	**AOR (95%CI)**	**P-value**
Age (years)				
<30	1		1	
30-45	0.83(0.56-1.23)	0.361	0.88(0.54-1.46)	0.633
46-60	0.70(0.22-2.27)	0.556	0.87(0.24-3.16)	0.828
Sex				
Male	1		1	
Female	0.66(0.41-1.06)	0.085	0.65(0.39-1.06)	0.085
Professional grade				
Medical Laboratory Assistant	1		1	
Medical Laboratory Technician	2.37(0.94-6.02)	0.069	2.08(0.79-5.43)	0.133
Medical Laboratory Scientist	1.08(0.49-2.36)	0.852	0.91(0.41-2.03)	0.818
Marital status				
Single	1		1	
Married	0.74(0.51-1.09)	0.126	0.81(0.42-1.56)	0.526
Divorced	0.68(0.09-4.91)	0.702	0.66(0.08-5.53)	0.704
Number of children				
0	1		1	
1	0.62(0.35-1.10)	0.102	0.75(0.35-1.59)	0.458
>1	0.79(0.52-1.22)	0.293	0.94(0.46-1.91)	0.866

Region of workplace				
Northern Ghana	1		1	
Central Ghana	2.00(0.58-6.92)	0.274	2.59(0.67-10.08)	0.169
Southern Ghana	0.93(0.29-2.89)	0.898	1.04(0.30-3.54)	0.954
Location of workplace				
Urban	1		1	
Rural	0.82(0.54-1.27)	0.380	0.94(0.59-1.49)	0.806
Practice setting				
Academic	1		1	
CHAG	4.44(0.81-24.23)	0.086	3.47(0.62-19.46)	0.158
Government	3.17(0.60-16.69)	0.173	2.56(0.47-13.84)	0.275
NGO	2.50(0.09-62.60)	0.577	1.95(0.08-50.42)	0.686
Private	2.95(0.54-16.05)	0.211	2.13(0.38-11.94)	0.391
Quasi-Government	1.50(0.22-10.30)	0.680	1.28(0.18-9.04)	0.808
Level of facility				
District hospital	1		1	
Health Centre	0.74(0.44-1.22)	0.237	0.62(0.36-1.07)	0.087
Polyclinic	1.44(0.26-8.06)	0.679	1.39(0.24-8.16)	0.712
Regional hospital	1.12(0.56-2.25)	0.740	1.21(0.59-2.44)	0.597
Teaching hospital	1.00(0.57-1.77)	0.994	1.02(0.57-1.83)	0.942
Psychiatric hospital	0.72(0.04-11.68)	0.817	0.85(0.05-13.92)	0.909

*Model adjusted for Age, Sex, professional grade, marital status, and number of children

Discussion

Job satisfaction has been expressed in diverse concepts in academia and corporate settings as a determinant of job efficiency and productivity (Ali, 2016; Zhu, 2012). An employee's job satisfaction level is evaluated in an organization to assess job contentment, affection, and motivational drive (Akuffo, Agyei-Manu, et al., 2021). The current cross-sectional study, therefore, highlights the factors affecting the job satisfaction and retention of medical laboratory professionals in Ghana. The majority of the medical laboratory professionals in this study demonstrated poor job satisfaction. An estimated 66.2% of the professionals were dissatisfied with their jobs. This estimated rate of job dissatisfaction may be novel and does not resonate with known similar studies among medical laboratory professionals globally. However, it agrees with several similar studies among nurses in Ghana (42–70%) (Ayalew et al., 2019; Senek et al., 2020) and health workers in general (47–60%) (Abate & Mekonnen, 2021; Afulani et al., 2021; Deriba et al., 2017). Also, several factors influence the varying levels of job dissatisfaction. In a multinational health facility-based study in SSA, laboratorians in Ethiopia, Kenya, Nigeria, Rwanda, Tanzania, Uganda, and Zambia strongly declared a lack of professional development and a lack of a clear career path as disincentives to their job satisfaction (Marinucci et al., 2013). A qualitative study revealed the common factors that influenced poor job satisfaction among medical laboratory staff in Oman (Alrawahi et al., 2019). These include a large workload, poor promotion, and career progression policies and appraisals, sub-standard health and safety in the laboratory, poor leadership-staff relationships, and a lack of professional recognition and

appreciation. The main factors that influenced their job dissatisfaction in the current study were marriage life, large family size, rural settlement, and working in public or government-owned health facilities. In an SSA setting such as Ghana, large family size is a notable African value, hence putting stress on the little resources of the professionals (Onuoha, 2015). This resonates with the findings that medical laboratory professionals in government facilities earn less than their colleagues in quasi-government facilities (Table 7). In addition, age was a significant predictor of job dissatisfaction. This may be largely influenced by the incentives and privileges that accompany leadership roles assigned to older professionals. Younger professionals may be especially dissatisfied with their jobs as a result of this.

On the other hand, similar studies in the United States of America (USA) demonstrated high job satisfaction among the clinical laboratory professionals included in the study (81.6%) (Doig & Beck, 2004) and 62.7% (Garcia et al., 2020). These were significantly influenced by good salaries and job independence, and they felt appreciated for their commitment and contribution to healthcare, unlike the lack of professional recognition, lack of appreciation, and lack of respect demonstrated by the current study. However, these studies appreciated the not-so-best work-life balance, job stress, and burnout at the workplace. This marked discordance with the current study in an SSA setting may be attributed to the wide difference in socio-economic conditions. According to the World Bank, Ghana is a low-middle income country (The World Bank, 2022). Hence, there is a high tendency toward disproportionate and unmatched remunerations and incentives for medical laboratory professionals between the two economies. Though a study in Nepal recorded high job satisfaction among medical laboratory professionals (67.4%), the COVID-19 pandemic further reduced their affection for the job (43.19%) (Basnet et al., 2022). This was significantly influenced by poor infrastructure, no continuous professional development, a poor supply chain system for laboratory consumables, and a high workload.

The current study established high attrition tendencies among medical laboratory professionals (59.7%). These were common among the Medical Laboratory Technician and Medical Laboratory Scientist cadres, as well as professionals who work in CHAG and government facilities. Poor remuneration played a major role in this decision since it was evident in the current study that CHAG and government-owned health facilities paid less than quasi-government institutions. This agrees with a similar study among laboratory professionals in seven (7) SSA countries that reported a more likely change of jobs by laboratory staff in the private sector compared with their counterparts in the public sector due to poor remuneration (Marinucci et al., 2013). Moreover, there are agitations over the comparably inequitable distribution of rewards, remunerations, motivation, or welfare packages among the various professions in the healthcare setting, especially among facility administrators and managers, laboratory professionals, nurses, and physicians (Doig & Beck, 2004). This confirms the varying factors that influenced the high attrition decisions in the current study, thus the lack of appreciation, poor working conditions, and lack of benefits.

This study employed a clear study design and reproductive methodologies in achieving its objectives. In addition, to the best of our knowledge, this is the first of such evaluations among the medical

laboratory professional fraternity in Ghana. This serves as a novel guide and blueprint for the Human Resource Department of the Ministry of Health and its agencies, including the health facilities and the Finance Ministry of Ghana, in their recruitment processes and budgetary allocations, respectively. However, the use of a self-administered online questionnaire may have inconvenienced most professionals, who may have agreed to respond to the survey due to internet challenges at their locations. Also, the cross-sectional study design restricts the establishment of a cause-effect relationship among job satisfaction, job retention, and all associated factors. This study did not intend to generalize, though the minimum required sample size was used. Future studies using mixed methods (quantitative and qualitative) should be explored to demonstrate the weighted lived experiences of medical laboratory professionals in routine practice and to assess their mental health and burnout tendencies.

Conclusion

In this study, we discovered that medical laboratory professionals have low job satisfaction, unbalanced work and personal lives, and high job attrition rates. These were largely influenced by the fear of job insecurity, lack of professional recognition, appreciation, and respect, lack of professional autonomy, lack of clear career progression, lack of professional development opportunities and policies, poor and unsafe working environments, poor management-staff relationships, and unsatisfactory appraisal. Above all, no condition of service, no rewards, motivation, or welfare packages, including no staff accommodation policies and poor salary and remuneration, resonated with the medical laboratory professionals. The Ministry of Health in Ghana and its agencies, the professional body of the medical laboratory fraternity, and its labor union should engage in broader stakeholder consultation. This must be geared towards developing standard policies on the scope of practice, career progression, and conducive conditions of service for medical laboratory professionals. Maintaining high levels of job satisfaction and retention among medical laboratory professionals is a recipe for effective clinical diagnostics and healthcare delivery. Ultimately, this will contribute to meeting Sustainable Development Goal 3 in Ghana.

Ethics Approval

The study followed the data protection regulations governing the handling of online data in surveys, according to the Data Protection Commission (DTC, 2020). The Ghana Association of Medical Laboratory Scientists (GAMLS), the governing body of medical laboratory professionals in Ghana, approved this study. All laboratory professionals who responded to the online survey gave informed consent in a clear, common language that they understood. Consent language was provided on the front page of the study questionnaire with a button to move to the next page to respond to the study questionnaire. All the included professionals had the option of skipping questions.

Consent for publication

Not applicable

Competing interests

The authors declare no competing interest.

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Authors' contributions

ED was responsible for the conception and design, acquisition of data, data analysis, interpretation of data, drafting of the manuscript, and final approved version.
SA made contributions to the study conception and design, drafting of the manuscript, and final approved version
NAA made contributions to study conception and design, drafting of the manuscript, and the final approved version
RKDE was responsible for study supervision, study conception and design, interpretation of data, drafting of the manuscript, and the final approved version
All authors reviewed the manuscript and agreed to the final draft for submission

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Availability of data and materials
The dataset for the study is available from the corresponding author upon request.

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