



Factors Affecting Job Satisfaction among the Biomedical Equipment Technicians Working in Health Sector of Nepal: A Mixed-Methods Study

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ABSTRACT

Background: Job satisfaction is a vital concern for both managers and academics. Biomedical Equipment Technicians (BMETs) exemplify technical professionals and have also been affected by the factors of job satisfaction. This research is mainly focused on the job satisfaction of BMETs working in government and private health facilities to determine the factors affecting job satisfaction in their present scenario.

Methods: We distributed questionnaires to all 148 Biomedical Equipment Technicians (BMETs) in Nepal, with 91 of them responding for quantitative data. Additionally, we gathered qualitative data from 6 BMETs from 6 health facilities, evenly split between urban and non-urban regions, with 3 facilities from each type. In total, 18 interviews (6 FGD with the department in charges, 6 interview with the Medical Superintendent/biomedical engineer and 6 interview with BMETs of each facility) were conducted across these 6 health facilities. Our analysis included a descriptive examination of the survey data and a comparison of job satisfaction factors between the government and private sectors. Furthermore, we utilized NVivo 12 to code the qualitative data based on themes.

Results: The data shows that there is no significant difference in job satisfaction between BMETs in the government and private sectors overall. However, it does reveal that BMETs in government hospitals tend to be more satisfied with their earnings compared to those in the private sector. While the overall levels of satisfaction and dissatisfaction are similar for both groups of participants for most of the factors of job satisfaction.

Conclusion: Overall, BMETs find enjoyment in their work, showcasing their dedication to their roles despite the various unsatisfactory factors present in hospital settings in both government and private sectors.

Keywords: Job satisfaction, health facilities, BMETs.

BACKGROUND

With the necessity of increasing equipment repair and maintenance in the hospitals of Nepal, the National Health Training Center started a year course of biomedical equipment training with support of development partners in 2004 AD. Since 2014, the training program has been upgraded to an eighteen-month academic course of Diploma in Biomedical Equipment Engineering (DBEE) affiliated under Council for Technical Education and

Vocational Training (CTEVT). (1) A continuous partner in hospital service of Nepal, Nick Simons Institute, has been instrumental in developing, promoting and deploying BMETs in district level hospitals to enhance rural healthcare services. (2) The prime responsibilities of BMETs include a) maintaining and repairing biomedical equipment b) processing equipment-related orders, and c) documentation as well as recommend hospital administration on equipment procurement.

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The National Health Sector Strategic Plan (2022-2030) and the National Strategy on Human Resources for Health (2021-2030) highlight the importance of production and deployment of BMETs for the availability of biomedical equipment. (3) Their permanent consumption in public hospitals is yet to be practiced, creating a confidence gap among the BMETs currently deployed through external development partners and government sources. (4)

Among 245 BMETs graduated till 2022 AD, 89 were working in the government sector and 59 in the private sector, remaining either unemployed or outside of the health sector. This opens the area to study on the job satisfaction of BMETs as a large portion is not in the health sector. Job satisfaction has an impact on the general life and productivity as satisfied employees have better mental and physical well-being. (5) It has been considered vital for the retention of health workers in the rural and remote areas of the country. (6) Thus, the current study attempts to identify the level of job satisfaction among these cadres and explore the factors affecting job satisfaction.

METHODOLOGY

Study design

We designed a mixed-methods study, whereby triangulating the qualitative and quantitative data obtained from the BMETs with the participants from the selected hospitals.

Study procedure and participants selection

A tracking of the BMETs (245 BMETs had been graduated till 2022 AD) was done to identify their status in the country at the initiation of the study. We identified 148 BMETs working in both public and private health sector as the main study population.

For quantitative survey, questionnaire was sent to all 148 BMETs where the major variable was job satisfaction which included other factors such as pay, promotion, benefits, rewards, supervision, operating procedure, co-workers, nature of work and communication together with independent variables as age, working period, salary, and the type of facility.

Semi-structured interviews and focus group discussions (FGDs) were carried out with BMETs and health facility personnel at selected hospitals. A total of 12 in-depth interviews were conducted with BMETs and 6 with medical superintendents or biomedical engineers from the hospitals. Additionally, 6 FGDs were organized with department incharge, including those in charge of the operating theater, radiology, emergency department, nursing, and hospital management.

The hospitals where BMETs were deployed were selected using a purposive sampling method to ensure representativeness based on criteria such as geography, political divisions, ownership, and hospital levels. Within the qualitative data collection, we interviewed 6 BMETs; 4 from government hospitals (comprising 2 permanent and 2 temporary BMETs) and 2 from private hospitals. Hospital personnel were included in qualitative interactions to gather their perceptions and opinions regarding job satisfaction of BMETs. Overall, 12 in-depth interviews, 6 with BMETs and 6 with medical superintendents/biomedical engineers, along with 6 FGDs, were conducted at their own respective hospitals. The qualitative guidelines for both FGDs and KII were designed based on the pay and benefits, working environment, training and promotion and overall work satisfaction as the main areas which were related with job satisfaction. The contents in the IDI included, demographic information, job role and responsibilities, perceptions of job satisfaction, training and professional development, challenges faced, support and resources, career advancement and opportunities, and suggestions for improvement. Whereas the contents of FGD were, collective perspectives, group dynamics and roles, common challenges, job satisfaction themes, training needs, interdepartmental relationships and recommendations.

6 BMETs posted hospitals were purposively selected from a mix of urban and non-urban health facilities. (7) Kathmandu and Lalitpur as urban sites and Sankhuwasabha, Nawalpur and Jhapa as non-urban sites. Urban areas in this study are characterized by high population density and significant infrastructure development while non-urban areas, are rural areas, characterized by lower population density and more open space. (8) This included 4 government hospitals (2 permanent and 2 temporary BMETs) and 2 private hospitals (1 BMETs from each).

Table 1: Sites for qualitative study

Study sites	Government Hospital with Temporary BMET	Government Hospital with Permanent BMET	Private Hospitals
Urban sites	Kanti Children Hospital 350 bedded (Kathmandu) (5*, 2**)	National Trauma Center 200 bedded (Kathmandu) (7*, 2**)	Nepal Medicity Hospital 750 bedded (Lalitpur) (4*, 2**)
Non-urban sites	District Hospital Sankhuwasabha (Sankhuwasabha) (7*, 2**)	Prithvi Chandra Hospital (Nawalpur) (5*, 2**)	Purbanchal Cancer Hospital (Jhapa) (7*, 2**)

*Number of participants in FGD, **Number of participants in KII

Data collection instruments and procedures

For assessing the job satisfaction, we adopted Paul Spector's Job Satisfaction questionnaire already validated in health sector employees in Nepal. It consists of the nine facets of job satisfaction; pay, promotion, benefits, rewards, supervision, operating procedure, co-workers, nature of work and communication together with age, working period, salary, and the type of facility. (9) For the quantitative data, a questionnaire was sent to 148 BMETs via email, and responses were received from 91 of them. The lower response rate may be attributed to the sensitivity of the subject matter (job satisfaction), as well as factors such as lack of time or fear of potential consequences which significantly impacted our outcome which we knew while conducting qualitative survey as we had to withdraw from some of the hospitals as not allowed for study. We acknowledge, Job satisfaction of the BMETs who didn't participate in the study might be different.

Topic guides were developed for qualitative interactions through an iterative process which included the possible factors that could influence the job satisfaction like perceptions on financial/non-financial benefits, working environment, team support, job description in the hospital, supervision, further growth areas. A pre-test of the topic guide was conducted at Bharatpur Cancer Hospital, where a temporary BMETs had been deployed. This allowed us to adjust in the topic guide like incorporating an introductory section aimed at making participants more comfortable before we start the core interview. A team of experienced researchers were provided one day orientation on the purpose and topic guides before field visits. The duration of data collection was 5 months from August 2022 to December 2022.

Data analysis

The survey consisted of a job satisfaction scale by Paul Spector (9) for the quantitative study. In which job satisfaction's original category was converted into a continuous scale of binary form (0 and 1) as; [(strongly disagree" and "disagree" as 0 (which is not satisfied) and "Agree" and "strongly agree" as 1 (which is satisfied) leaving "don't know" and refuse to answer)]. (10) This was for the positive statements, however vice versa for negative statements. It was done for ease of analysis. The descriptive analysis for frequency, percentage, mean and standard deviations was performed while ANOVA test was used to identify the difference among the categories of participants. A Karl Pearson's correlation test was done to identify the correlation between the type of health facility BMETs were working and the Job Satisfaction score while a comparative analysis between the private and government facilities was conducted.

All the interviews and FGDs were recorded, subsequently transcribed, and then translated into English language. To ensure the accuracy of the translation process, five pages from two randomly chosen transcripts were back translated into Nepali and meticulously compared with the original recordings for consistency and fidelity of meaning. For the qualitative analysis, the translated interviews were coded into their respective themes. The thematic analysis was facilitated using NVivo software, which allowed for systematic organization and examination of the data. All the codes of the qualitative data from in-depth interviews and focused group discussions generated 4 main themes: pay and benefits, working environment, training and promotion, and overall work satisfaction through a deductive approach.

Ethical consideration

The field researchers obtained written informed consent from participants after clearly explaining the purpose, procedure, and potential risks associated with the study during the interviews. The researchers ensured that participation was voluntary and informed participants that they could withdraw from any or all sections of the interview at any time. For the quantitative survey conducted via mailed questionnaires, a section for informed consent was attached where they had to indicate their agreement by checking "yes I agree to participate" before proceeding to further sections. The whole form was obtained from the participants and assured if they had agreed before inclusion for data entry and analysis. The study participants were assured of the privacy and confidentiality of their information through anonymous reporting of the study findings. Furthermore, the ethical approval for conducting study was obtained from the Nepal Health Research Council (NHRC) with Reference Number: 64/2022.

RESULTS

Job satisfaction among the participants by categories

The average job satisfaction score of the participants was $62.38\% \pm 14.7$ ranging from minimum of 24.2% to maximum 87.1%. Among the participants categories, BMETs of less than 25 years old were more satisfied while the satisfaction level decreased with the increase in age, except in the 40 years and above age group. Higher satisfaction was observed among participants with experience of 13-24 months and lowest among 60 months and above experience, but not much variance found among categories. Participants with salary scale NRs 50,000 and greater were the most satisfied compared to other participants. However, the difference observed among all the categories was not statistically significant ($p < 0.05$).

Table 2: Satisfaction score by participant categories

Categories	N	Mean	Std. Dev.	Minimum	Maximum	P-value
Age (in years)						
Less than 25	35	66.9	13.0	36.1	87.0	0.4
26 to 30	34	62.1	15.8	30.6	87.1	
31 to 35	11	53.3	15.2	24.2	76.0	
36 to 40	7	52.4	7.8	38.9	61.3	
40 and above	4	61.7	16.2	50.0	85.7	
Total	91	62.2	14.8	24.2	87.1	
Service Period (in months)						
0 to 12	29	64.8	16.7	24.2	87.0	0.3
13 to 24	8	67.6	18.5	36.1	87.1	
25 to 36	13	63.8	12.7	40.6	85.7	
37 to 48	12	59.9	11.7	40.7	86.4	
38 to 60	15	60.4	12.0	30.6	76.9	
60 and above	14	57.7	16.0	30.6	86.7	
Total	91	62.4	14.8	24.2	87.1	
Salary Scale (in NRs thousand)						
Less than 20	7	62.0	16.2	37.5	81.8	0.2
20 to 35	50	61.1	14.6	30.6	87.1	
36 to 50	28	61.5	15.2	24.2	87.0	
Greater than 50	6	75.3	7.0	66.7	86.4	
Total	91	62.2	14.8	24.2	87.1	

Participants based on the different facets of job satisfaction

The 9 facets of satisfaction were also analyzed in which BMETs were most satisfied with the nature of the work they are doing and least satisfied with the portion of opportunities they are getting in their work, with the overall satisfaction of 62.4%. BMETs seem much less satisfied also with the rules and procedures on their workstation.

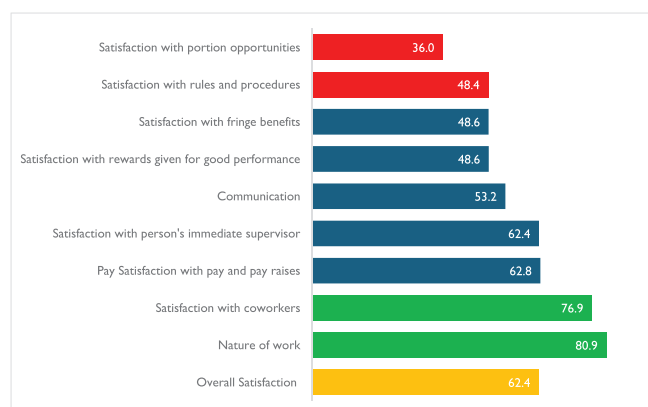


Figure 2: Percentage of clients who were satisfied by the satisfaction items.

Differences based on type of health facility of BMET

To observe any differences and relation among the participant's job satisfaction score and type of facility they were working independent t-test and the correlation test was conducted private facilities in which Pearson's correlation test was conducted.

Table 3: Independent t-test based on type of facilities

Facility Type	N	Mean	Std. Dev.
Government	54	62.1	13.9
Private	37	62.8	15.9

Characteristics	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	0.9	0.3	-0.2	89	0.8	-0.7
Equal variances not assumed			-0.2	70.3	0.8	-0.7

The results show that the mean difference between the two groups is -0.6881. The t-statistic is -0.218 with a p-value of 0.339. The p value is greater than 0.05, indicating the mean difference is not statistically significant.

Table 4: Pearson correlation between satisfaction score and satisfaction item scores

Items	Pearson Correlation coefficient (r)	Sig. (2-tailed)	N
Facility type	0.02	0.8	91

The Pearson Correlation between facility type and satisfaction score is 0.023, indicating weak positive relation but not statistically significant. So, we fail to reject the null hypothesis can say that there is no significant difference between satisfaction among government and private BMET employees.

Satisfaction comparison among BMETs from government and private facilities

The individual questions for each of the nine facets of job satisfaction were analyzed in relation to type of health facilities. The table below shows the top five and bottom five satisfaction categories for participants.

Table 5: Top five satisfied items from Government vs Private facilities workers

Items from Government	Percentage	Items from Private	Percentage
I like doing things I do at work	96	I like my supervisor	90
I like people I work with	94	I like people I work with	85
I feel a sense of pride in doing my job	94	I like doing things I do at work	84
I enjoy my coworkers	92	My supervisor is quite competent in doing his/her job.	83
My job is enjoyable	90	I enjoy my coworkers / I feel a sense of pride in doing my job	82

Table 6: Top five unsatisfied items for Government vs Private facilities workers

Items from Government	Percentage	Items from Private	Percentage
I don't feel my efforts are rewarded the way they should be	36	I have too much to do at work	42
My supervisor shows too little interest in the feelings of subordinates	33	My supervisor shows too little interest in the feelings of subordinates	31
There are benefits we do not have which we should have	30	There are benefits we do not have which we should have	27

There is really, too little chance for promotion on my job	24	Raises are too few and far between	26
I have too much to do at work	24	There is really, too little chance for promotion on my job	21

In general, the main subjects of satisfaction and dissatisfaction for the participants from both government and private hospitals were the same, but there was difference in terms of proportion.

Qualitative findings

For qualitative analysis four thematic areas were identified; a) pay and benefits, b) working environment, c) training and promotion, and d) overall work satisfaction which are presented in this section:

A) Pay and Benefits

In general, BMETs working in the government hospital were more satisfied than those from the private hospitals. Moreover, the BMETs deployed through NSI (a development partner in health sector) are perceived to be more satisfied than the BMETs working as government permanent staff. "He is deployed by NSI in this hospital. NSI is supporting the deployed staff very well with the handsome payment in the remote district hospitals." KII_GTM_NUr.

The permanent government staff receive benefits such as medical insurance and festival allowances but do not receive overtime pay. On the other hand, temporary government staff do not receive any such facilities. Private staff, however, enjoy technical allowances as part of their benefits.

"He has the salary of government level with an additional support of 5-7 thousand per month as motivation from the hospital development committee." KII_GPM_Nur

"Not satisfied or even motivated here, especially salary, I would have more motivated if the salary is high even just up to the government level." IDI_PB_Ur

"In my view they should be satisfied with the benefits. They do have technical allowance and night duty allowance as well." KII_SuP_Ur

B) Working environment

The working environment is an important factor for the job satisfaction of employees. We segregated it into three components: co-workers and supervisors, workload, and availability of equipment.

Most of the BMETs working either in the government or private hospitals were satisfied with their co-workers and supervisors. However, a few BMETs mentioned that they were not satisfied with the administrative staff as

they do not prioritize BMETs in the hospital.

“I work with doctors and nurses, so they know my work, but the management people don’t know about work. At the time of evaluation, which is done by the management people, they don’t know what I accomplished.” IDI_GTB_Ur

Workload was another major factor identified for job satisfaction. Almost all hospitals had only one BMETs, they would always be on-duty and must be stand by for unforeseen emergencies to repair equipment. On one hand, it highlights their workload, while on the other, it underscores their significance within the hospital, ultimately contributing to an increased workload. Thus, mixed responses were observed.

Availability of spare parts or infrastructure for maintenance and repair has affected the satisfaction of BMETs. Both the government and private hospitals did not have spare parts for the equipment and BMETs could not repair them at the time needed. Participant from government hospital said, “May be because it is government hospital, situation might be same everywhere. Though it is big hospital, the equipment as well as parts are lacking. I cannot repair when needed.” IDI_GPB_Ur

Participant from private hospital reported, “Difficulties in the work is spare parts. When something breaks down, we fix it what we can but if we must change the spare parts, it is hard.” IDI_PB_Ur

Thus, BMETs in both the government and private sector are dissatisfied because of the lack of spare parts and management.

C) Training and Promotion

Despite the importance of refresher training mentioned by the equipment users and the supervisors, most of the BMETs involved in the study said that they haven’t had chance to get training related biomedical equipment maintenance. One of the BMETs working in government hospital said, “I haven’t got any training from here.” IDI_GPB_Ur

However, some of them said that during the installation of equipment in the hospitals, the vendors give orientation regarding the handling and basic maintenance of medical equipment.

One BMET working in the private hospitals said, “I didn’t get any trainings till now, but we learn something from the vendor when the equipment breaks down and also in the installation.” IDI_PB_Ur

In contrast, one of the BMET supervisors said, “If the government has training for BMET and we got his name we will send him for sure, but hospital itself hasn’t started training for BMETs yet.” KII_GPM_Nur

This reveals the dissatisfaction among the BMETs as their skill has not been refined according to technology and time. The participants suggested improving job satisfaction by provision of in-service training on medical equipment, HTM training, involving BMETs in preparing technical specifications and logistics process for medical equipment in the deployed health facilities.

Participants felt no chance for promotion or is rare for them. For their career to progress they need to study further but being a local, facility wants to retain for longer halting BMETs career growth: “May be because I am local, they haven’t prioritized me. If there was anyone else instead of me, they might have prioritized. So, I feel I am less prioritized because of being local.” IDI_GTB_NUr

Whereas even the permanent government BMETs reported, “We don’t have good promotion, growth, or scholarship system and all. There should be provision of scholarships for our further study to upgrade from technician to engineer as the upgrade of hospital demands higher technical HR. This can boost the career and we can show performance too.” IDI_GPB_NUr

In Private hospitals promotion is difficult as well, one of the BMET from private hospital quoted, “I don’t think I will get any promotion or anything. In today’s scenario I think I will work here, get the experience, and then get upgrade if possible if not I will go to abroad.” IDI_PB_Ur. And this clearly pictures the higher dissatisfaction of them.

D) Overall work satisfaction

In-depth interviews with BMETs working in both the government and private hospital, disclosed that they have passion to work in biomedical field and enjoy what they are doing despite dissatisfaction in various factors in their job. As one of the government hospital’s BMET quoted, “Satisfaction is when I do my work but sometimes, they ask me to do work other than biomedical, so I get down.” IDI_GTB_Ur

The scenario is found to be same for the private hospitals, one of the BMETs from the private hospital quoted as, “I enjoy my work itself; I came in this field because I have passion for this.” IDI_PB_Ur

As a BMET work satisfaction is however equally dependent on the successful repairment of the equipment as one of the BMET from government hospital quoted as, “But sometimes I feel bad when I feel I could have fixed this equipment if I were in urban area, like availability of spare parts and other parts. So, some of the equipment are piled up here or should be sent to Kathmandu for repairment, this makes me sad sometimes.” IDI_GTB_NUr

Defined job description was also one of the major

reported causes for dissatisfaction among government BMETs. “We must have proper job description in which it is written, we must do this and that. The only solution is, if we can work with full authority for the equipment only it will be better.” IDI_GPB_Ur

Hence, it is found that in some government hospitals BMETs are satisfied with the work they do as it is their passion whereas some BMETs are dissatisfied because they don't even know what their responsibilities are, the ceiling of their obligation.

DISCUSSION

One of the primary responsibilities of Biomedical Equipment Technicians (BMETs) is to maintain this equipment, and their effectiveness in this role directly influences public perception of healthcare quality and the overall reliability of health services in hospitals. A prevailing sense of dissatisfaction has driven an increased reliance on healthcare facilities, even among those with limited financial means. (11)

Today's hospitals rely heavily on various types of medical equipment for diagnosing, monitoring, and treating patients. It is nearly impossible to deliver effective health services without these essential tools. (12) However, Nepal encounters problems with out-of-date and poorly maintained facilities and equipment. (13) Nepal Ministry of Health and Population (2022) emphasize the importance of periodic repair and maintenance of medical equipment, particularly focusing on preventive and corrective measures, which is directly related to the job satisfaction of BMETs. (14)

Our study includes BMETs in Nepal working in government and private sector. The research provides valuable insights into their overall job satisfaction, which stands at 62%. Among various factors assessed, BMETs in the government sector expressed the highest satisfaction rate (96%) regarding the nature of their work, also, in the interview BMETs from government sector expressed their passion for the work and stated that they enjoy their work. Conversely, BMETs in the private sector reported that 90% are satisfied with their supervisors. However, there are notable areas of dissatisfaction.

Government BMETs are most dissatisfied (36%) with the rewards they receive for their efforts. All the professionals seek recognition and appreciation for their contributions, yet BMETs in the government sector often go unnoticed despite their significant efforts in the healthcare field. (15) A specific example of this neglect is their lack of membership in the Nepal Health Professional Council (NHPC) which is the responsible body for registration of all the health professionals specially paramedics, in the country. (16)

To date, BMETs have been advocating for their rightful acknowledgment within this council.

In the private sector BMETs face the highest dissatisfaction (42%) concerning their workload in health facilities. They have also stated in the interview, being high workload as one of the major issues, according to Nepal's labor laws, maximum working hours are 8 hours daily and 48 hours weekly but in case BMETs in private sector they must work more than 8 hours because of lack of staffs. (17)

In our study, government BMETs generally report higher levels of job satisfaction compared to their private-sector counterparts, primarily due to the superior benefits and facilities available to them, alongside with a standard salary of approximately Rs.35000. To add, it is worth noting that BMETs are also employed by the Nick Simons Institute for government hospitals, where they receive competitive salaries, as mentioned by several supervisors. (18) One of the studies reveals, the paramedical staff are happier in government hospital due to high salary as compared to private hospital and less work. (19) As per Imperial Law Associates, the minimum wage for workers as of 2080 B.S. is set at least at NRs 17,300. (20) Even some of the BMETs in the private sector still earn below this minimum wage, contributing to their dissatisfaction regarding compensation, which is a valid concern. When it comes to relationships with co-workers, both government and private BMETs report satisfaction. On the other hand, both groups express dissatisfaction regarding the availability of spare parts in their hospitals.

Additionally, both government and private BMETs are unhappy about the absence of proper job description and with the opportunities for training and promotion. (21) One of the studies highlighted that, Job descriptions are important for each worker as they are a guideline for the work expected of them, the skills required, and possible ways to achieve promotion. (22) This points out the importance of job description in the job which is absent in case of BMETs. In addition, although the “Progress of Health and Population Sector, 2022/23” report emphasizes the need to enhance the capacity for maintaining biomedical equipment at the local level through training for BMETs at provincial hospitals, with technical support by the Nick Simons Institute, no additional training has been provided to BMETs at the provincial level as of July 2023. (23)

Despite all these challenges, BMETs from both sectors share a strong passion for their work. A notable 90% of government BMETs enjoy their jobs, while 84% of private BMETs also find satisfaction in their work. With these findings, we can conclude that there is no significant difference in job satisfaction levels between government and private BMETs. Both groups

experience satisfaction and dissatisfaction regarding various factors, though the percentages differ.

Limitations

Our study encountered significant limitations, including difficulty in securing private organizational participation due to the sensitivity surrounding job satisfaction, which led to a lower-than-expected response rate. Despite efforts to clarify objectives and ensure confidentiality, some private organizations prohibited the study to avoid workflow disruptions. Additionally, the small sample size of 91 participants was attributed to tracking and recruitment challenges, restricted the study's findings.

CONCLUSION

The research highlights more than average job satisfaction (62.38%) among the BMETs attributed to factors such as age, years of service, and salary. These are not significantly different among private and government hospitals. A key concern is their dissatisfaction with salary levels, despite the structural support they receive from their work environment and colleagues. It becomes evident that the concerned authority should enhance BMETs effectiveness through comprehensive training programs to upgrade their skills. Additionally, well-defined job descriptions are essential for BMETs to perform their roles while being focused and confident on their job. Ultimately, promoting the contributions of BMETs within the healthcare sector is vital to improve their working conditions and ensure high-quality service in medical equipment management.

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