Contents list available at Jurnal Teknologi Laboratorium

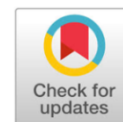# JURNAL TEKNOLOGI LABORATORIUM

Case Study

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Exploring the link between leader-member exchange and job satisfaction in the laboratory: A case study of nurses at Royal Prima Medan hospital, Indonesia

Arie Siah Putra Siahaan[1] , Sri Lestari Ramadhani Nasution[2*] , Ermi Girsang [3]
[1] Department of Biomedical Science, Faculty of Medicine, Dentistry and Health Sciences Universitas Prima Indonesia

Abstract: Job satisfaction is a critical aspect for hospital management, particularly in laboratory settings, as it significantly impacts nurse performance and the quality of laboratory services. Leadership plays a pivotal role in shaping the work environment, where leaders who effectively perform tasks, adopt appropriate leadership styles, and foster positive relationships can create a conducive and comfortable atmosphere for laboratory nurses. This study investigates the relationship between Leader-Member Exchange (LMX) indicators—affection, loyalty, contribution, and professional respect—and job satisfaction among laboratory nurses at Royal Prima Medan Hospital. Employing a descriptive quantitative approach with a cross-sectional design, this research analyzes data using univariate, bivariate, and multivariate methods. The findings reveal that the majority of respondents were over 45 years old (40.6%), predominantly female (85.7%), had a work tenure of less than five years (57.1%), and held a bachelor's degree (51.5%). The study identified significant relationships between LMX indicators and job satisfaction: affection, loyalty, contribution, and professional respect each demonstrated positive correlations with job satisfaction. Furthermore, these LMX indicators collectively influenced job satisfaction among laboratory nurses. These findings emphasize the importance of effective leadership in laboratory settings to enhance job satisfaction and ensure optimal nurse performance at Royal Prima Medan Hospital.

Keywords: Job Satisfaction; Leader-Member Exchange (LMX); Laboratory Nurses; Leadership and Work Environment; Royal Prima Medan Hospital.

INTRODUCTION

Health development is one of the priorities in national development which aims to achieve an optimal level of public health[1,2]. The community needs health services as a facility that is used to improve their health[3]. In this case, the hospital plays an important role as one of the health care facilities. Based on Law Number 44 of 2009, hospitals have the duty to provide comprehensive individual health services, including promotive, preventive, curative, and rehabilitative measures[4]. In addition, hospitals also play a role in supporting the improvement of the quality of health services by following the development of medical science and technology, as well as increasing the competence of health workers through training and education[5,6]. Through these efforts, hospitals are expected to be able to improve the overall health status of the community, in line with the ideals of national health development.

Organizational success is highly dependent on qualified human resources, not just on materials such as equipment or machinery[7]. In hospitals, good human resource management plays an important role in achieving quality services[8]. In hospitals, good human resource management plays an important role in achieving

quality services, not only in the aspect of physical healing but also patient satisfaction with the attitude of officers, facilities, and a comfortable environment. Especially medical officers who must be managed optimally in order to be able to work productively in providing the main service. Most of the services in medical services are carried out by nurses[9]. Nurses play a vital role in patient health services, being at the patient's side for 24 hours and covering more than 50% of the hospital workforce. Therefore, it is necessary for nurses to be productive and engaged in their work to remain optimal, despite working for long periods of time. However, research in Indonesia shows that many nurses including clinical laboratorians experience low to moderate levels of job satisfaction, which impacts performance and quality of care. In hospitals, including clinical laboratories, leadership is critical as these environments face high stress, such as accuracy demands, heavy workloads, and time pressure. The LMX approach helps leaders build good collaboration, creating productive cooperation and a comfortable working atmosphere[10].

Job satisfaction plays an important role in supporting the performance of nurses, including those working in clinical laboratories. Job satisfaction reflects the extent to which individuals feel happy or unhappy about their work and is a reflection of their positive attitude in the work environment[11]. A sense of satisfaction at work plays an important role for every employee because it has a positive impact on behavior, such as discipline and morale[12]. It can encourage nurses' performance to be more effective even in stressful environments such as laboratories[13]. Leadership factors have a positive influence on the work environment[14]. Effective communication between leaders and subordinates is essential in solving problems that arise in the hospital as well as in conveying instructions clearly. This has a direct effect on efficiency and accuracy in health services, which is one of the indicators of hospital success. In healthcare, nurses' job satisfaction is often associated with factors such as workload, reward system, quality of working relationships, and support from leaders. In clinical laboratories, poor relationships between leaders and nurses can increase the risk of burnout, which negatively impacts their job satisfaction and performance[15]. Hospital management needs to not only focus on the technical aspects of managing health facilities, but also on the psychological and emotional aspects that affect nurses' performance. This is very important to ensure that nurses in laboratories can work effectively in the face of high demands[16].

Human resource management is a way to utilize human resources as an effective work unit in improving performance[17]. In addition, involving nurses in important decisions related to nurses' duties can increase their sense of belonging and involvement with the organization, which in turn will increase job satisfaction[18]. Transformational leadership that pays attention to personal development aspects of subordinates has been proven effective in increasing work motivation and organizational commitment[19]. This is in line with the LMX approach, which prioritizes positive reciprocal relationships between leaders and subordinates to create a work environment that supports the growth and development of nurses[20]. The approach used in describing the relationship between employees and their superiors is described in the Leader-Member Exchange (LMX) theory[21]. LMX theory focuses on the supervisor-subordinate relationship, where each supervisor will build different relationships with their subordinates[22]. Mutual respect between superiors and subordinates, positive interactions shown by superiors to subordinates, and behaviors that go beyond the established job description characterize relationships with high LMX quality[23]. In clinical laboratories, good LMX relationships are especially important because nurses face unique challenges, such as pressure to produce accurate and timely diagnostic results. Supportive leadership through an LMX approach can help create a conducive work environment, minimize work stress, and improve collaboration between laboratory staff and other medical teams. Thus, good quality of LMX not only increases job

satisfaction but also contributes to productivity and accuracy in the laboratory, which are key elements in supporting the overall quality of healthcare services[24].

Leader-Member Exchange (LMX) theory emphasizes the importance of a good relationship between leaders and employees to create a positive work environment. In clinical laboratories, this relationship is particularly important as nurses face challenges such as accuracy of diagnostic results, time pressure, and teamwork. Good leadership can improve team cohesiveness, reduce errors, and support productivity. Therefore, this study aims to analyze the relationship between LMX and nurses' job satisfaction in the clinical laboratory of Royal Prima Medan Hospital.. Laboratory teams play a key role in hospital medical services, and their success depends on effective leadership. With the LMX approach, a good relationship between leaders and staff can reduce stress, increase collaboration, and improve job satisfaction, which in turn improves laboratory performance and accuracy.

MATERIAL AND METHOD

This type of research is descriptive quantitative research with a design using Cross Sectional. The cross-sectional design was chosen because it allows data collection at one time to identify the relationship between existing variables, without having to wait for changes over a long period of time. With this design, the research can clearly describe how the quality of the relationship between leaders and nurses affects their job satisfaction. The selection of quantitative methods in this study aims to test the hypothesis that has been set with relevant statistical analysis to objectively measure the relationship between variables[25,26]. The research was conducted in May - July 2024.

Population refers to all elements that will be the object of research that have similar characteristics, it can be individuals in a group, events, or certain objects to be studied[27]. The population in this study consisted of 266 nurses working in various units and departments at Royal Prima Medan Hospital, including inpatient, emergency, and intensive care. Although the data collected reflected nurses' job satisfaction in general, this study did not distinguish nurses involved in laboratory services. Therefore, specific analysis for nurses working in clinical laboratories needs to be conducted to gain a more in-depth understanding of job satisfaction in the laboratory environment.

The development of research instruments is carried out through systematic stages, starting with the formulation of research objectives and determining indicators as a guide. Based on these indicators, an instrument lattice is prepared which becomes the basis for developing question or test items. The instrument was then refined through an editing process, including the preparation of implementation guidelines, and ended with the establishment of a scoring system to ensure objective and accurate measurement. High job satisfaction, which is influenced by positive relationships between leaders and nurses in the laboratory, is critical in maintaining quality and reducing errors. Nurses who are satisfied with their jobs tend to be more careful and conscientious, which can reduce diagnostic errors, increase adherence to standard operating procedures (SOPs), and improve the accuracy and reliability of test results. Good relationships between laboratory leaders and staff support work efficiency, reduce the likelihood of errors, and ensure more accurate results for patients.

Data analysis with validity and reliability tests conducted in this study to assess the quality of research instruments used on nurses, including those working in laboratories. The validity test ensures that the questions asked to nurses reflect the actual conditions in the laboratory, such as job satisfaction and interactions with leaders. Meanwhile, the reliability test measures the consistency of the answers of nurses, including those working in the laboratory, to ensure that the measurement results remain stable and reliable, both in measuring job satisfaction

and laboratory performance. Thus, good validity and reliability tests will provide accurate and consistent data to assess the factors that affect nurses' job satisfaction in the laboratory and their impact on laboratory performance.

Univariate analysis is used to describe the characteristics of respondents through frequency distribution and percentage of each variable presented in tabular form[28]. Furthermore, bivariate analysis was carried out using a cross table and continued with the Chi Square test to test the relationship between variables[29]. The last stage is multivariate analysis using multiple logistic regression test, chosen because the dependent variable is categorical data and aims to identify the relationship between more than one independent variable, as well as determine the most dominant variable[30]. This analysis uses predictive modeling to obtain the best model in predicting the dependent event, where the process begins by conducting bivariate analysis on each independent variable on the dependent variable.

RESULTS AND DISCUSSION

Univariate Analysis

The following are the results of univariate analysis of Affection indicators in Leader-Member Exchange (LMX) in nurses at RSU Royal Prima Medan, including nurses in the laboratory:

Table 1. Results of Univariate Analysis

Variables	Evaluation Levels	Frequency	Percentage %
Affection	Good	219	82.3
	Less Good	47	17.7
	Total	266	100
Loyalty	Good	219	82.3
	Less Good	47	17.7
	Total	266	100
Contribution	Good	228	85.7
	Less Good	38	14.3
	Total	266	100
Professional Respect	Good	194	72.9
	Less Good	72	27.1
	Total	266	100
Nurse Job Satisfaction	Satisfied	226	85
	Less Satisfied	40	15
	Total	266	100

Source: Primary Data Processed 2024

The data presented in the table highlights the evaluation of Leader-Member Exchange (LMX) indicators—affection, loyalty, contribution, and professional respect—and job satisfaction among nurses at Royal Prima Medan Hospital. For the affection indicator, the majority of respondents, totaling 219 individuals (82.3%), rated it as good, while 47 respondents (17.7%) considered it less good. Similarly, the loyalty indicator was perceived positively by 219 respondents (82.3%), with the same proportion of 47 respondents (17.7%) rating it as less good. The contribution indicator received the highest positive rating among the four LMX indicators, with 228 respondents (85.7%) evaluating it as good. Meanwhile, only 38 respondents (14.3%) found it less good. In terms of professional respect, 194 respondents (72.9%) rated it as good, whereas a relatively higher percentage of 72 respondents (27.1%) considered it less good compared to other indicators.

Regarding job satisfaction, the results reveal that 226 respondents (85%) expressed satisfaction with their jobs, while 40 respondents (15%) reported being less satisfied. These findings suggest that while the majority of nurses, including

those working in the clinical laboratory, have a positive perception of LMX indicators and job satisfaction, there remains a notable proportion of individuals, particularly in the professional respect indicator, who perceive these aspects less favorably. This highlights the need for targeted interventions to improve professional respect and ensure sustained job satisfaction among nurses.

Bivariate Analysis

The results of the following analysis show the relationship between the leader-member exchange variable of the Affection indicator and the performance of nurses, including those working in the laboratory, at Royal Prima Medan hospital.

Table 2. Relationship of Leader Member Exchange on Indicators with Job Satisfaction

| Variables | Criteria | Nurse Job Satisfaction | | | | Total | | .sig |
| | | Satisfied | | Less Satisfied | | | | |
		Freq	Percent (%)	Freq	Percent (%)	Freq	Percent (%)	
Affection	Good	196	73.7	23	8.6	219	82.3	
	Less Good	30	11.3	17	6.4	47	17.7	0.000
	Total	226	85	40	15	266	100	
Loyalty	Good	197	74.1	22	8.3	219	82.3	
	Less Good	29	10.9	18	6.8	47	17.7	0.000
	Total	226	85	40	15	266	100	
Contribution	Good	199	74.8	29	10.9	228	85.7	
	Less Good	27	10.2	11	4.1	38	14.3	0.010
	Total	226	85	40	15	266	100	
Professional Respect	Good	177	66.5	17	6.4	194	72.9	
	Less Good	49	18.4	23	8.6	72	27.1	0.000
	Total	226	85	40	15	266	100	

Source: Primary Data Processed 2024

The data presented in the table illustrates the relationship between Leader-Member Exchange (LMX) indicators—affection, loyalty, contribution, and professional respect—and nurse job satisfaction at Royal Prima Medan Hospital. The findings demonstrate a significant association between each LMX indicator and job satisfaction ($p < 0.05$), indicating that these factors play a crucial role in influencing nurses' levels of satisfaction. For the **affection** indicator, 196 respondents (73.7%) who rated this aspect as good reported being satisfied with their jobs, while 23 respondents (8.6%) from this group were less satisfied. Among those who rated affection as less good, 30 respondents (11.3%) were satisfied, and 17 respondents (6.4%) were less satisfied. Overall, 82.3% of respondents rated affection positively.

The **loyalty** indicator showed similar results, with 197 respondents (74.1%) who rated it as good reporting satisfaction, while 22 respondents (8.3%) were less satisfied. Among those who rated loyalty as less good, 29 respondents (10.9%) were satisfied, and 18 respondents (6.8%) were less satisfied. Like affection, loyalty was rated positively by 82.3% of respondents. For the **contribution** indicator, 199 respondents (74.8%) who considered it good reported being satisfied, while 29 respondents (10.9%) from this group were less satisfied. Among those who rated contribution as less good, 27 respondents (10.2%) were satisfied,

and 11 respondents (4.1%) were less satisfied. Contribution was the highest-rated indicator, with 85.7% of respondents evaluating it as good.

The **professional respect** indicator had a slightly lower proportion of positive responses, with 177 respondents (66.5%) who rated it as good reporting satisfaction, while 17 respondents (6.4%) were less satisfied. Among those who rated professional respect as less good, 49 respondents (18.4%) were satisfied, and 23 respondents (8.6%) were less satisfied. Despite this, professional respect still received a positive rating from 72.9% of respondents.

These findings highlight that all LMX indicators—affection, loyalty, contribution, and professional respect—are significantly related to nurse job satisfaction. Notably, contribution had the highest positive response rate, while professional respect had the lowest. The significant p-values (all < 0.05) suggest that improvements in these LMX dimensions could lead to increased job satisfaction among nurses, thereby enhancing the overall performance and work environment at Royal Prima Medan Hospital.

Multivariate Analysis

The results of the multivariate analysis presented in Table 3 demonstrate the relationship between the four Leader-Member Exchange (LMX) indicators—affection, loyalty, contribution, and professional respect—and job satisfaction among nurses at Royal Prima Medan Hospital. Each variable was analyzed to determine its significance in predicting job satisfaction.

Table 3. Multivariate Analysis Results

Variables	P-Value	Candidate	F	Sig	T
Affection (X1)	0	Yes			1.827
Loyalty (X2)	0	Yes			2.978
Contribution (X3)	0.01	Yes	11.019	0.000	0.929
Professional Respect (X4)	0	Yes			2.178

Source: Primary data processed (2024)

The **affection** variable (X1) shows a p-value of 0, indicating a statistically significant relationship with job satisfaction. This variable was selected as a candidate in the model, with an F-value of 11.019 and a T-value of 1.827, demonstrating its strong influence on job satisfaction. The **loyalty** variable (X2) also exhibits a p-value of 0, confirming its significant contribution to the prediction of job satisfaction. The T-value of 2.978 further supports its critical role in enhancing nurses' satisfaction levels. For the **contribution** variable (X3), the p-value of 0.01 indicates a significant but comparatively weaker relationship with job satisfaction than affection and loyalty. The T-value of 0.929 suggests that although contribution is an important factor, its influence on job satisfaction is relatively lower compared to other variables. The **professional respect** variable (X4) also shows a p-value of 0, signifying a strong and significant relationship with job satisfaction. With a T-value of 2.178, professional respect emerges as one of the critical determinants of nurses' satisfaction.

In summary, the multivariate analysis underscores that all four LMX indicators—affection, loyalty, contribution, and professional respect—are significant predictors of job satisfaction among nurses. Among these, loyalty and professional respect exhibit the highest T-values, indicating their particularly strong influence. These findings suggest that hospital management should prioritize improving these LMX dimensions to enhance job satisfaction and overall organizational performance.

Discussion

The Relationship between Leader Member Exchange on Affection Indicators and Job Satisfaction in Nurses, including those working in the laboratory of Royal Prima Hospital Medan

The results showed that respondents who said the leader member exchange indicator of Affection in nurses at Royal Prima Medan Hospital was good as many as 219 with a percentage of 82.3% and respondents who said the leader member exchange indicator of Affection in nurses at Royal Prima Medan Hospital was not good as many as 47 with a percentage of 17.7%. From the results of the cross table in this study shows that if the leader member exchange indicator of Affection in nurses is good then nurses who feel satisfied with their work are 196 (73.7%) and those who are less satisfied are 23 (8.6%). If the leader member exchange indicator of affection in nurses is not good, nurses who are satisfied with their work are 30 (11.3%) and those who are less satisfied are 17 (6.4%). The results of the chi square test obtained a significance value of 0.000 <0.05 which means that there is a relationship between leader member exchange on the Affection indicator on job satisfaction in nurses at Royal Prima Medan General Hospital.

Improving the quality of health services is strongly influenced by the quality of nursing and nurse satisfaction at work. Nurses, as the largest part of the healthcare team, have an important role in improving the quality of care. In laboratories, affective relationships between leaders and laboratory staff are key in ensuring work motivation and diagnostic accuracy. Therefore, it is important to implement participative leadership, which involves laboratory staff in decision-making regarding workflow, as well as encouraging professional respect to ensure conscientious work and improve diagnostic quality[31,32].

Relationship between Leader Member Exchange on Loyalty Indicators and Job Satisfaction in Nurses, including those working in the laboratory of Royal Prima Hospital Medan

The following are the results of the relationship between leader member exchange on loyalty indicators on job satisfaction in nurses at RSU Royal Prima Medan. The results showed that respondents who said the leader member exchange indicator of loyalty in nurses at RSU Royal Prima Medan was good as many as 219 with a percentage of 82.3% and respondents who said the leader member exchange indicator of loyalty in nurses at RSU Royal Prima Medan was not good as many as 47 with a percentage of 17.7%. From the results of the cross table in this study, it shows that if the leader member exchange indicator of loyalty to nurses is good, nurses who are satisfied with their work are 197 (74.1%) and those who are less satisfied are 22 (8.3%). If the leader member exchange indicator of loyalty to nurses is not good, nurses who are satisfied with their work are 29 (10.9%) and those who are less satisfied are 18 (6.8%). The results of the chi square test obtained a significance value of 0.000 <0.05 which means that there is a relationship between leader member exchange on the loyalty indicator on job satisfaction in nurses at Royal Prima Medan Hospital.

Nurses as the main human resources in hospital health services, have a very important role in supporting patient care, often working outside standard working hours. Loyalty in the workplace, which is reflected in the reciprocal relationship between leaders and subordinates, greatly affects job satisfaction. In laboratories, it is important to implement participative leadership, engage laboratory staff in decision-making regarding workflows and procedures, and encourage professional respect to improve diagnostic accuracy and precision. Additionally, it is important to integrate laboratory performance metrics such as test turnaround time, error rates, and adherence to laboratory protocols. Multidisciplinary collaboration between laboratory staff and other departments, such as physicians and nurses, can also be strengthened through managing good

relationships between leaders and staff, ultimately improving the quality of patient care[33].

Relationship between Leader Member Exchange on Contribution Indicators and Job Satisfaction in Nurses, including those working in the laboratory of Royal Prima Hospital Medan

The results showed that respondents who said the leader member exchange indicator of contribution to nurses at RSU Royal Prima Medan was good as many as 228 with a percentage of 85.7% and respondents who said the leader member exchange indicator of contribution to nurses at RSU Royal Prima Medan was not good as many as 38 with a percentage of 14.3%. From the results of the cross table in this study shows that if the leader member exchange indicator of contribution to nurses is good then nurses who feel satisfied with their work are 199 (74.8%) and those who are less satisfied are 29 (10.9%). If the leader member exchange indicator of contribution to nurses is not good, nurses who are satisfied with their work are 27 (10.2%) and those who are less satisfied are 11 (4.1%). The results of the chi square test obtained a significance value of 0.010 <0.05 which means that there is a relationship between leader member exchange on contribution indicators on job satisfaction in nurses at Royal Prima Medan General Hospital.

One of the factors determining the progress or failure of a hospital depends on human resources, because human resources drive the wheels of the company[34]. Contribution of perceptions about task-oriented activities at a certain level between each member to achieve a common goal (explicit or implicit). Subordinates who have good performance and give a positive impression of the leader will cause a higher quality of exchange than subordinates who have poor performance. Strategies that can be applied in laboratories include participative leadership that involves laboratory staff in decision-making regarding workflow and operational procedures. This will increase the sense of responsibility and work motivation, which has a direct impact on diagnostic accuracy and efficiency. Integrating laboratory metrics, such as turnaround time of test results, error rates, and adherence to protocols, can also improve the quality and performance of laboratory services. In addition, a positive LMX will strengthen collaboration between laboratory staff and other departments, such as doctors and nurses, in providing more coordinated and quality care for patients.

The Relationship of Leader Member Exchange on Indicators of Professional Respect to Job Satisfaction in Nurses, including those working in the laboratory of Royal Prima Hospital Medan

The results showed that respondents who said the leader member exchange indicator of respect for nurses at RSU Royal Prima Medan was good as many as 194 with a percentage of 72.9% and respondents who said the leader member exchange indicator of professional respect for nurses at RSU Royal Prima Medan was not good as many as 72 with a percentage of 27.1%. From the results of the cross table in this study, it shows that if the leader member exchange indicator of professional respect for nurses is good, nurses who feel satisfied with their work are 177 (66.5%) and those who are less satisfied are 17 (6.4%). If the leader member exchange indicator of professional respect for nurses is not good, nurses who are satisfied with their work are 49 (18.4%) and those who are less satisfied are 23 (8.6%). From the results of the chi square test, the significance value is 0.000 <0.05, which means that there is a relationship between leader member exchange on the indicator of professional respect for job satisfaction in nurses at Royal Prima Medan Hospital.

In improving the quality and quantity of hospital services, a management system is needed that can mobilize all existing human resources so that it will have an impact on performance achievement[35]. Professional respect is a perception that

describes the extent to which reciprocal relationships have built a reputation both inside and outside the organization. This perception is based on historical data about individuals, such as personal experiences, comments from others inside or outside the organization and awards or other professional recognition achieved. Thus, it is possible that perceptions of respect for an individual are formed before the individuals work or meet and influence each other. In a laboratory, professional respect is essential to motivate laboratory staff to do their work thoroughly and accurately. Mutual respect between laboratory leaders and staff can strengthen collaboration, increase work motivation, and reduce diagnostic errors. By building a good reputation and motivating laboratory staff to excel, hospitals can ensure that the laboratory test results produced are accurate and in accordance with established standards, and support the hospital's efforts to provide high-quality services[36].

The Relationship of Leader Member Exchange on Indicators of Affection, Loyalty, Contribution and Professional Respect Together or Simultaneously to Job Satisfaction in Nurses, including those working in the laboratory of Royal Prima Hospital Medan

The results of multivariate analysis showed that the variables of affection, loyalty, contribution, and professional respect simultaneously had a significant relationship with nurses' job satisfaction at Royal Prima Medan General Hospital, with a significance value of 0.000 <0.05. Of these variables, loyalty has the greatest influence on nurses' job satisfaction, with the highest t value of 2.978. This suggests that the more loyal nurses are to their leaders, the more satisfied they are with their jobs. When nurses feel valued and loyal to their leaders, they will give their best performance, which has a positive impact on hospital services and patient satisfaction.

Research conducted by Griffith, Hom, and Gaertner (2000) shows that good relationships in Leader Member Exchange (LMX) have a positive impact on loyalty and performance, and can reduce the intention to leave the organization. In hospitals, this is relevant because nurses who have good relationships with leaders tend to be more loyal, more satisfied with their work, and make greater contributions to the quality of health services provided. Research by Masterson, Lewis, Goldman, and Taylor (2000) found that employees who belong to the "in-group" in LMX have better performance and are more committed to staying longer in the organization. In line with these findings, research at RSU Royal Prima Medan shows that the loyalty variable, which is part of LMX, has a significant influence on nurses' job satisfaction. The results of the analysis showed that loyalty was the variable most related to job satisfaction, which is in line with previous studies on the important role of leader-subordinate relationships in improving motivation and performance in professional environments. This is also true in laboratories, where diagnostic accuracy is highly dependent on the engagement and motivation of laboratory staff. Applying good LMX principles, such as participative leadership, can increase professional respect which encourages more conscientious and less error-prone work, critical in producing accurate test results for patients.

CONCLUSION

The findings of this study demonstrate a significant relationship between Leader-Member Exchange (LMX) indicators—affection, loyalty, contribution, and professional respect—and job satisfaction among nurses at Royal Prima Medan Hospital. The results highlight that **loyalty** is the most influential variable, with the highest T-value (2.978) in the multivariate analysis, followed by **professional respect** (T-value 2.178), **affection** (T-value 1.827), and **contribution** (T-value 0.929). Nurses who have strong, positive relationships with their leaders, characterized by loyalty and mutual respect, report higher levels of job satisfaction,

which in turn has a direct impact on their performance and the overall quality of hospital services.

These findings also have implications for the clinical laboratory environment. Strong LMX relationships, particularly in terms of loyalty and professional respect, can improve teamwork, workflow efficiency, and accuracy in diagnostic results. The participative leadership approach, where leaders actively involve staff in decision-making and foster mutual respect, can enhance motivation and accountability among laboratory staff. This is particularly important given the high-stress nature of laboratory work, where precision and timeliness are critical. The study underscores the need for hospital management to prioritize leadership strategies that foster positive LMX relationships. By improving affection, loyalty, contribution, and professional respect, hospital leaders can enhance job satisfaction, reduce staff turnover, and improve the overall performance of healthcare teams. In the context of clinical laboratories, fostering these relationships can lead to better collaboration with other departments, such as doctors and nurses, ultimately improving the quality of health services delivered to patients.

Future research should explore the broader implications of LMX in interdepartmental collaboration and its impact on specific outcomes, such as patient satisfaction, clinical accuracy, and operational efficiency. Additionally, studies could investigate strategies to strengthen LMX relationships in high-stress and specialized environments like clinical laboratories, thereby contributing to the development of targeted interventions for improving healthcare outcomes.

AUTHORS' CONTRIBUTIONS
All authors contributed equally in every stage of the research process.

DATA AVAILABILITY STATEMENT
The utilized data to contribute to this investigation are available from the corresponding author on reasonable request.

DISCLOSURE STATEMENT
The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors. The data is the result of the author's research and has never been published in other journals.

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