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The relationship between training and workload on the implementation of communication in the phlebotomy process

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Abstract

Phlebotomy is an essential laboratory procedure that requires not only technical skills but also effective communication with patients to ensure accuracy and safety. This study aimed to analyze the relationship between training and workload with the implementation of communication during phlebotomy at Tabanan Regional General Hospital. A cross-sectional correlational design was conducted on 26 laboratory staff selected by total sampling, with data collected through structured questionnaires and analyzed using the Spearman Rank test. The results showed a significant positive correlation between phlebotomy training and communication implementation, with a moderate-to-strong correlation ($p = 0.002$, $r = 0.586$), while no significant correlation was found between workload and communication implementation, although the correlation direction was negative and very weak ($p = 0.260$, $r = -0.229$). These findings indicate that phlebotomy training enhances communication skills, whereas workload does not significantly influence communication effectiveness, highlighting the importance of continuous training to improve patient safety and service quality in laboratory practice.

Keywords: Phlebotomy; Training; Workload; Communication; Laboratory Staff

1. Introduction

Phlebotomy is one of the most important procedures in laboratory services, referring to venous blood collection for diagnostic examinations. The term *phlebotomy* originates from the Greek words "phle," meaning vein, and "tomy," meaning to cut or make an incision (Umar et al., 2023). The success of laboratory examinations is strongly influenced by the quality of the blood sample obtained; therefore, phlebotomy must be performed accurately, safely, and in accordance with standard operating procedures (SOP).

In practice, the success of phlebotomy procedures is determined not only by the technical skills of healthcare personnel but also by their ability to communicate effectively with patients. Good communication serves as the foundation for explaining the procedure, building trust, and verifying patient identity prior to blood collection. Communication errors may lead to misidentification, incorrect specimen collection, and diminished relationships between patients and healthcare workers (Mentari et al., 2024).

Nevertheless, in real-world settings, communication practices among laboratory personnel still face various challenges. Previous studies have reported common obstacles, including inadequate explanation of procedures, lack of clarification regarding patient understanding, and incomplete verification of patient identity (Lihabiabi, 2022). These issues may affect the quality of laboratory services and increase the risk of patient safety incidents, particularly in high workload situations where communication is often overlooked (Lihabiabi, 2022).

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The effectiveness of communication during phlebotomy can be influenced by several factors, such as training and workload. Training serves as a systematic intervention aimed at enhancing both technical and non-technical competencies. Well-designed training enables healthcare workers to better understand procedures, improve communication skills, and strengthen patient safety awareness. Regular participation in training has been shown to significantly improve communication quality, compliance with SOPs, and staff involvement in service delivery (Rosya et al., 2024). In the context of laboratory services, phlebotomy training has demonstrated positive impacts on communication. A study by Ristyaning et al. (2023) reported increased knowledge and communication skills among laboratory personnel after participating in training that combined interactive discussions and hands-on practice.

In addition to training, workload is another critical factor affecting communication quality. High workload can reduce focus, induce stress and fatigue, and limit staff interaction time with patients. Maharani and Budianto (2019) explained that heavy workload has a negative correlation with communication effectiveness, where healthcare workers tend to simplify communication, skip verification steps, or delay explanations due to service demands. In the context of phlebotomy, this may result in procedural errors, decreased patient satisfaction, and an increased risk of adverse events.

This condition is also evident at Tabanan Regional General Hospital, a referral hospital serving western Bali, where patient visits are relatively high each day. In its laboratory services, 26 personnel are directly involved in phlebotomy procedures, divided into several work shifts. This condition often results in a limited number of staff during certain shifts, especially in the morning. Preliminary observations and interviews revealed that patient communication has not been fully optimal, as some staff reported incomplete delivery of information due to time constraints, heavy workload, and unequal training distribution.

The interrelation between training, workload, and communication is therefore important to examine in the context of phlebotomy procedures. Adequate training can enhance staff communication skills in a professional and patient-safety-oriented manner, while high workload may hinder the implementation of effective communication. When training is not equally provided and workload is poorly managed, the risks of miscommunication, misidentification, and decreased service quality increase. Therefore, this study aimed to determine the relationship between training and workload with the implementation of communication in the phlebotomy process at Tabanan Regional General Hospital.

2. Material and Method

This correlational quantitative study with a cross-sectional design aimed to examine the relationship between phlebotomy training, workload, and communication performance among laboratory personnel at Tabanan Regional General Hospital, Bali, Indonesia, in June 2025. The population consisted of 26 laboratory staff performing phlebotomy, and total sampling was applied. Data were collected using structured questionnaires, including demographic information, training history, workload (5 items), and communication performance (10 items) rated on a 5-point Likert scale. Training participation was assessed as a dichotomous variable (Yes/No). The questionnaire was pre-tested for validity and reliability on 30 staff from other hospitals.

Data processing involved coding, entry into SPSS, cleaning, and tabulation. Univariate analysis described the distribution of each variable, while bivariate analysis used Spearman's rank correlation to examine the relationships between training, workload, and communication performance, with significance set at $p < 0.05$. Ethical principles including informed consent, confidentiality, and non-maleficence were strictly followed to ensure participants' rights and data privacy (Ministry of Health, 2021; Triwibowo, 2014).

3. Result and Discussion

3.1. Phlebotomy Training for Laboratory Staff at RSUD Tabanan

This study was conducted at the Regional General Hospital (RSUD) Tabanan, Bali, Indonesia, a type B teaching hospital with comprehensive laboratory services. The study involved all 26-laboratory staff performing phlebotomy. All respondents were in the adult age group (19–59 years), representing 100% of participants. In terms of gender, most respondents were female, totaling 23 (88.5%), while males were only 3 (11.5%). Regarding education, 25 respondents (96.2%) had a diploma (D3) in Medical Laboratory Technology, and 1 respondent (3.8%) held a D4 degree. Concerning work experience, 25 respondents (96.2%) had more than 5 years of experience, while 1 respondent (3.8%) had less than 5 years.

Based on the data, 16 respondents (61.5%) had never attended phlebotomy training, while 10 respondents (38.5%) had received training. This indicates that most laboratory staff have not received formal training in phlebotomy techniques. Work training is a form of non-formal education aimed at improving practical skills in a short period (Anton, 2024). The lack of training can result in procedural inconsistencies and reduce effective communication between staff and patients.

Previous studies support the importance of training. Marsudi et al. (2024) found that participants' knowledge improved significantly after phlebotomy training, with most understanding general techniques, vein selection, and modern procedures. Hartati et al. (2023) showed that even brief education for laboratory staff improved patient safety knowledge. These findings highlight the need for structured and ongoing training to enhance laboratory staff competence, particularly in communication and patient safety.

Although most respondents had a D3 degree in Medical Laboratory Technology (96.2%) and over 5 years of experience (96.2%), the lack of training shows that education and experience alone are insufficient without continuous professional development. Structured training is crucial to ensure quality in phlebotomy practice, communication, patient safety, and overall laboratory services.

3.2. Workload of Laboratory Staff at RSUD Tabanan

Among the 26 respondents, 10 (38.5%) had attended phlebotomy training, whereas 16 (61.5%) had never received training. Regarding workload, 11 respondents (42.3%) reported a moderate workload, 10 respondents (38.5%) reported a heavy workload, and 5 respondents (19.2%) reported a light workload. Communication implementation during the phlebotomy process was categorized as follows: 10 respondents (38.5%) were classified as "adequate," 10 respondents (38.5%) as "good," and 6 respondents (23.1%) as "very good."

The data show that 11 respondents (42.3%) experienced moderate workload, 10 respondents (38.5%) heavy workload, and 5 respondents (19.2%) light workload. This indicates that most laboratory staff must complete numerous tasks in limited time, including phlebotomy procedures, which may affect concentration, communication with patients, and increase the risk of errors if not managed effectively.

Workload is defined as the total tasks that must be completed within a certain period, affecting physical, cognitive, and emotional capacity (Nabawi, 2019). High workload without proper systems can lead to fatigue, stress, procedural errors, and lower service quality. Similar findings were reported by Kurniati and Tahono (2016) at BBKPM Surakarta Laboratory, where staff shortages affected efficiency and service quality. Although not specifically about phlebotomy communication, high workload can hinder optimal procedural execution and effective patient interaction.

Most respondents had over 5 years of experience (96.2%) and were in the productive age range of 19–59 years, supporting adequate work endurance. However, sustained high workload without effective management may still reduce performance. Evaluating and distributing workload fairly, along with adequate support, is necessary to maintain optimal laboratory service.

3.3. Communication Implementation During Phlebotomy at RSUD Tabanan

Communication ability among respondents was categorized as adequate (10 respondents, 38.5%), good (10 respondents, 38.5%), and very good (6 respondents, 23.1%). This indicates that most respondents had sufficient communication skills, though only a few reached the very good category.

Effective communication is essential in healthcare to ensure patient safety, particularly in phlebotomy, which requires accurate identification and information delivery (Sari, 2016). Lestari and Siska (2022) highlighted that clear and targeted communication significantly influences compliance and behavior, reinforcing its importance in laboratory settings.

Most respondents were female (88.5%), in the productive age range, had a D3 degree in Medical Laboratory Technology (96.2%), and over 5 years of experience (96.2%). These characteristics support adequate communication ability, as experience and maturity enhance interpersonal skills. Although most respondents showed adequate to good communication, continuous improvement remains important to ensure optimal interaction during phlebotomy procedures.

3.4. Relationship Between Training and Communication Implementation

Among respondents who had never received phlebotomy training (16 respondents, 61.5%), most had adequate communication, while respondents with training (10 respondents, 38.5%) showed higher levels of communication performance. Spearman correlation indicated a significant, moderately strong relationship ($r = 0.586$, $p = 0.002$, $p < 0.05$), showing that training improves communication quality during phlebotomy.

Training enhances knowledge, skills, and attitudes, improving task execution according to standards (Widasmara et al., 2023). Previous studies confirm that phlebotomy training improves technical skills, reduces errors, and strengthens procedural communication (Ristyaning et al., 2023; Batool et al., 2018; Anggraheni et al., 2021).

Even though some respondents had not attended training, a few still showed very good communication, suggesting that experience, education, and interpersonal skills also contribute. However, structured and ongoing training remains essential to improve technical and communication skills, enhancing patient safety and laboratory service quality.

3.5. Relationship Between Workload and Communication Implementation

Among respondents with light, moderate, and heavy workload, communication performance varied. Spearman correlation showed $r = 0.229$ and $p = 0.260$, indicating no significant relationship between workload and communication, although the relationship was weak. This suggests that high workload does not necessarily reduce communication quality.

These findings align with previous studies (Lestari et al., 2024; Prayuda, 2021) showing that professional attitude and experience allow staff to maintain effective communication despite workload. However, other studies (Somadayo, 2017) reported a negative correlation between workload and communication.

In this study, most respondents had over 5 years of experience and D3 education, which likely supported effective communication despite high workload. Accumulated experience helps manage time, reduce stress, and maintain structured communication. Therefore, even under moderate to heavy workload, communication quality can be maintained due to individual characteristics such as experience, education, and professionalism.

4. Conclusion

This study aimed to determine the relationship between training and workload on communication implementation during the phlebotomy process at RSUD Tabanan. Based on the results and discussion, the conclusions are as follows:

- Most laboratory staff at RSUD Tabanan have never attended phlebotomy training, with 16 respondents (61.5%) reporting no prior training.
- The majority of staff reported a moderate to heavy workload, with 11 respondents (42.3%) in the moderate category and 10 respondents (38.5%) in the heavy category.
- Communication implementation during phlebotomy was mostly in the adequate to good range, with 10 respondents (38.5%) in the adequate category and 10 respondents (38.5%) in the good category, although some communication aspects were still not optimally applied.
- There is a significant positive relationship between phlebotomy training and communication implementation, with a moderate to strong correlation ($p = 0.002$, $r = 0.586$).
- There is no significant relationship between workload and communication implementation, although the correlation direction indicates a very weak negative association ($p = 0.260$, $r = 0.229$).

In conclusion, phlebotomy training plays an important role in supporting staff communication quality during the phlebotomy process, whereas workload does not show a significant influence on communication in this study.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict-of-interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Anggraheni, D., Legowo, P., and Tambunan, M. (2021). Analisis Risiko Hematom Pada Pengambilan Darah (Studi Kasus: Klinik "P"). Jurnal Manajemen Risiko, 1-34.

[2] Anton, M. (2024). Pengaruh Pelatihan dan Pemberian Insentif terhadap Kinerja Kader Kesehatan melalui Motivasi Kerja sebagai Variabel Intervening. Jurnal Syntax Dmiration, 733-749.

[3] Batool, H., Mumtaz, A., Qadeer, S., and Bakht, Z. A. (2018). Impact of Supervised Phlebotomy Training Programme on Performance Skills of Phlebotomy Staff. Annals of King Edward Medical University, 1-3.

[4] Hartati, D., Nurhidayanti, Juraijin, D., and Ramadhania, F. (2023). Peningkatan Pengetahuan ATLM Mengenai Management Patient Safety pada Tindakan Flebotomi. Khidmah.ikestmp.ac.id, 56-64.

[5] Lestari, S. S., and Siska. (2022). Pengaruh Komunikasi Kesehatan Reisa Broto Asmoro dalam Meningkatkan Kesadaran Mematuhi Protokol Kesehatan. Journal of Communication and Society, 44-61.

[6] Marsudi, L. O., Aminuddin, M. F., Susanto, Z. A., and Putri, M. (2024). Pemberian Pelatihan Pengambilan Darah Vena dan Kapiler Pada SMK Negeri 17 Samarinda. Jurnal Pengabdian Masyarakat Linggamas, 7-16.

[7] Nabawi. (2019). Pengaruh Lingkungan Kerja, Kepuasan Kerja dan Beban Kerja Terhadap Kinerja Pegawai. Jurnal Ilmiah Magister Manajemen, 170-183.

[8] Prayuda, I. K. (2021). Hubungan Antara Beban Kerja Dengan Kualitas Komunikasi Terapeutik Penata Anestesi. Denpasar: Institut Teknologi dan Kesehatan Bali.

[9] Ristyaning, P., Soleha, T., Graharti , R., and Oktoba, Z. (2023). Pelatihan Flebotomi Bagi Tenaga Kesehatan di RSUD Pesawaran Lampung. JPM Ruwa Jurai, 13-16.

[10] Widasmara, D., Budianto, M. B., Asmiragani, S., Herawati, H., and Alamsyah, A. (2023). Peningkatan Pengetahuan tentang Komunikasi Efektif melalui Pelatihan bagi Pegawai Rumah Sakit Umum Daerah Dr. Saiful Anwar, Malang. Jurnal Penelitian Kesehatan Suaar Forikes, 2-5.