

RADIOLOGIC TECHNOLOGISTS' WORKLOAD, BURNOUT LEVELS AND QUALITY OF PATIENT CARE IN SELECTED TERTIARY GOVERNMENT HOSPITALS IN METRO MANILA

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ABSTRACT

The evolving healthcare landscape has significantly impacted Radiologic technologists (RTs) who play a critical role in the diagnostic imaging services. While healthcare worker burnout has been widely studied, its specific effects on Radiologic Technologists in tertiary government hospitals remain underexplored, particularly amid rising patient volumes and technological advancements. This study aims to bridge the existing research gaps by analyzing the relationship between workload, burnout levels and quality of patient care among radiologic technologists in tertiary government hospitals in Metro Manila.

This study anchored based on the framework, Maslach's Burnout Theaory as cited by Sigh et al.(2023), The Job Demands-Resources Theory as applied by Makanjee et al.(2021), and Social Exchange Theory as cited by Elsholz et al.(2021). These models provided a foundation for understanding how workload influences burnout and how it affects the quality of patient care.

This study examined radiologic technologists' workload, burnout levels, and quality of patient care in selected tertiary government hospitals in Metro Manila. Specifically, it seeks to answer the following research questions: (1.) What is the workload level of radiologic technologists in selected tertiary government hospitals in Metro Manila? In terms of: (1.1) patient volume (1.2) procedure complexity (1.3) administrative tasks (1.4) shift patterns (1.5) image accuracy? (2.) What are the burnout levels experienced by radiologic technologists in these hospitals? In terms of: (2.1) emotional exhaustion (2.2) depersonalization (2.3) personal accomplishment? (3.) What is the level of patient care quality provided by the radiologic technologist? In terms of: (3.1) patient safety (3.2) patient experience? (4) Is there a significant relationship between radiologic technologists' workload and their burnout levels? (5) Is there a significant relationship between radiologic technologists' workload and the quality of patient care they provide? (6) Is there a significant relationship between radiologic technologists' burnout levels and the quality of patient care they provide?

The findings suggest that other factors may contribute to burnout and patient care quality. The study underscores the importance of managing workload, providing emotional support, streamlining administrative tasks, optimizing shift patterns and offering continuous training to enhance well-being to healthcare workers to improve the patient care quality.

Keywords: Radiologic Technologists' Workload, Burnout Levels and Quality of Patient Care in selected Tertiary Government Hospitals in Metro Manila.

1. INTRODUCTION

The healthcare landscape has undergone significant transformations in recent years, particularly affecting radiologic technologists (RTs) who play a crucial role in diagnostic imaging essential for patient care assessment and management. While previous research has extensively documented the general challenges faced by healthcare workers, the specific impact on radiologic technologists in tertiary government hospitals remains understudied, especially in the context of increasing patient volumes and technological advancements (Akudjedu et al., 2020).

Recent studies have highlighted concerning trends in occupational burnout among healthcare workers, including radiologic technologists. Evidence suggests that RTs operate under conditions of elevated stress levels and burnout that can negatively impact both job performance and overall health (Elsholz et al., 2021). This phenomenon is particularly pronounced in hospital settings where resource constraints intersect with high patient volumes, creating unique challenges for healthcare delivery.

The relationship between workplace environment and healthcare outcomes has emerged as a critical area of investigation. Research has demonstrated strong correlations between work environment factors and job satisfaction among radiographers (Makanjee et al., 2021), while other studies have emphasized the complex interplay between occupational stress and service quality in tertiary healthcare facilities (Singh et al., 2023). These findings contrast with earlier research that focused primarily on technical aspects of radiologic practice without considering the human factors involved in service delivery.

Global health complications have further intensified the challenges faced by radiologic technologists. Studies have shown that increased workload and stress can significantly impact both the psychological and physiological health of RTs, as well as their self-efficiency and ability to maintain high standards of patient care (Tay et al., 2020). This is particularly relevant in tertiary government hospitals where the need to balance resource utilization with patient care outcomes creates additional pressure on healthcare workers.

The correlation between healthcare worker satisfaction and quality of care delivery has been well-documented (Tuveson & Börjesson, 2020). However, in the field of radiologic technology, where precision is paramount, the impact of workplace stress and burnout can have far-reaching consequences. Recent research by Probst et al. (2020) has shown that burnout significantly affects radiographer efficiency and may have direct implications for patient care quality, contrasting with earlier assumptions about the resilience of healthcare workers to workplace stress.

However, there are limited research studies that explore the workload/burnout challenges faced by radiologic technologists working in selected tertiary government hospitals in Metro Manila. There was a research gap concerning on constructing assessment tools that can be used in various healthcare organizations and at the same time that would retain the basic quality parameters for the quality of patient care.

This research aims to address significant gaps in current understanding by investigating the correlation between radiologic technologists' workload, burnout status, and quality of patient care in selected tertiary government hospitals in Metro Manila. While previous studies have examined these factors independently, this study uniquely combines these elements to provide a comprehensive analysis of their interrelationships. This approach contrasts with existing research that has typically focused on either workload management or quality metrics in isolation.

The significance of this study extends beyond individual worker health to encompass broader implications for healthcare organizations. As patient populations continue to evolve and technological advancement accelerates, understanding the relationships between workload, burnout, and care quality becomes increasingly crucial for the future of healthcare delivery. This research seeks to provide empirical evidence that can inform institutional policies and practices, potentially transforming how healthcare organizations support their radiologic technologists while maintaining high standards of patient care.

2. METHODOLOGY

The study utilized a descriptive-correlational research design. The target population was 77, and only 65 were included as respondents based on the Raosoft calculator, utilizing a 95% level of confidence and a 5% margin of error.

The study specifically conceptualized a self-made questionnaire to gather data on radiologic technologist workload, burnout levels and quality of patient care in selected tertiary government hospitals in Metro Manila. The questionnaire consisted of three (3) parts: Part I measured the radiologic technologists workload focusing on factors such as patient volume, procedure complexity, administrative tasks, shift patterns and image accuracy; Part II assessed the radiologic technologists burnout levels focusing on factors such as emotional exhaustion, depersonalization and personal accomplishment; and Part III determined the radiologic technologists quality of patient care focusing on factors such as image accuracy, patient safety and patient experience. The instrument's reliability was confirmed using Cronbach's Alpha, with workload (.895), burnout level (.908), and quality of patient care (.960) all achieving acceptable reliability.

Data analysis was conducted using weighted means for descriptive analysis and Pearson's r for correlational analysis. Ethical considerations were upheld by securing informed consent from participants and maintaining confidentiality.

3. RESULTS AND DISCUSSION

3.1 The Workload Level of Radiologic Technologists

Table 1. Workload level of Radiologic Technologists: Patient Volume

| Patient Volume | Weighted Mean | Verbal Interpretation | Rank |
|---|---------------|-----------------------|------|
| 1. I handle more patients than I can effectively manage during my shift | 3.29 | Very High | 3 |
| 2. The number of emergency cases I handle is manageable | 3.22 | High | 4 |
| 3. I frequently work beyond my scheduled hours to complete patient examinations | 3.38 | Very High | 2 |
| 4. The number of patients need to complete daily requires effective time management | 3.57 | Very High | 1 |

| | | | |
|--|------|-----------|---|
| 5. I have adequate time between patients to prepare for the next examination | 3.03 | High | 5 |
| Overall Weighted Mean | 3.30 | Very High | |

Based on the data in Table 1, the workload level of radiologic technologists, particularly in terms of patient volume is very high, with an overall weighted mean of 3.30. The highest-ranked item, with a weighted mean of 3.57, indicates that effective time management is crucial for handling the daily patient volume. This underscores the importance of time management skills and possibly the need for additional training or support systems. The second highest-ranked item, with a weighted mean of 3.38, shows that many respondents frequently work beyond their scheduled hours to complete patient examinations, highlighting the strain of the current workload and the potential for burnout. Handling more patients than can be effectively managed during a shift also received a "Very High" interpretation, with a weighted mean of 3.29, ranking third. This suggests that a significant number of respondents feel overwhelmed by their patient load. However, the manageability of emergency cases, with a weighted mean of 3.22 and a "High" interpretation, ranks fourth, indicating that while emergency cases are generally manageable, they still contribute to the overall workload stress. The adequacy of time between patients to prepare for the next examination, with a weighted mean of 3.03 which need to be improved in preparation time to reduce stress and enhance patient care. It reflects the overall significant concerns regarding patient volume and workload, suggesting a need for interventions to manage workload, improve time management, and reduce overtime to enhance job satisfaction and prevent burnout.

These findings align with the literature discussed by Jenkins et al. (2023), who examined current workload problems in radiologic technology in relation to changing healthcare demands. Jenkins et al. identified significant shifts in workload distribution due to advancements in technology, increases in patient numbers, and the expansion of services. They detailed how traditional workflow patterns have evolved with new imaging technologies and rising clinical demands, affecting service delivery and staff utilization. The study's data underscores the need for addressing these workload challenges to improve efficiency and the well-being of radiologic technologists.

Table 2. Workload level of Radiologic Technologists: Procedure Complexity

| Procedure Complexity | Weighted Mean | Verbal Interpretation | Rank |
|---|---------------|-----------------------|------|
| 1. I regularly perform complex imaging procedures requiring advanced technical skills | 3.46 | Very High | 1 |
| 2. I have sufficient time to complete my imaging tasks without rushing | 3.02 | High | 5 |
| 3. The variety of complex procedures I perform in a single shift is manageable | 3.14 | High | 4 |

| | | | |
|---|------|------------------|---|
| 4. I feel confident handling specialized imaging equipment | 3.42 | Very High | 2 |
| 5. I have adequate support when performing complex procedures | 3.26 | Very High | 3 |
| Overall Weighted Mean | 3.26 | Very High | |

Based on the data in Table 2, the workload level of radiologic technologists, particularly in terms of procedure complexity is very high, with an overall weighted mean of 3.26. The highest-ranked item, with a weighted mean of 3.46, indicates that technologists frequently perform complex imaging procedures requiring advanced technical skills. Confidence in handling specialized imaging equipment is also very high, with a weighted mean of 3.42, suggesting that technologists feel well-prepared for their tasks. Adequate support during complex procedures is another area of strength, with a weighted mean of 3.26. However, the time available to complete imaging tasks without rushing is rated lower, with a weighted mean of 3.02, indicating that time constraints are a significant concern. The manageability of the variety of complex procedures performed in a single shift is also rated high, with a weighted mean of 3.14. These findings highlight the need for continued support and resources to ensure that radiologic technologists can maintain high standards of performance without feeling rushed or overwhelmed.

It emphasizes the significant complexity and demands placed on radiologic technologists. These insights highlight the need for continuous support, effective time management, and ongoing training to ensure that technologists can maintain high standards of patient care while managing their complex workload efficiently.

Relating these findings to the literature, Foley et al. (2021) conducted a systematic analysis of multiple imaging modalities in three large centres to determine procedure complexity in the modern radiology practice. They described how the advancement in technology has placed higher cognitive and technical requirements on radiologic technologists in the last ten years. The researchers established a procedure complexity model that included technical demands, cognitive load, patient characteristics, and the level of skill needed, thus giving a more holistic approach to the issue of complexity.

Table 3. Workload level of Radiologic Technologists: Administrative Tasks

| Administrative Tasks | Weighted Mean | Verbal Interpretation | Rank |
|--|----------------------|------------------------------|-------------|
| 1. Documentation requirements take up too much of my clinical time | 3.02 | High | 5 |
| 2. I can complete administrative tasks within my regular shift hours | 3.06 | High | 3.5 |
| 3. The electronic health record system is efficient and user-friendly | 3.23 | High | 2 |
| 4. I have sufficient time to record equipment quality control procedures | 3.06 | High | 3.5 |

| | | | |
|--|------|------|---|
| 5. Administrative meetings don't interfere with my clinical duties | 2.94 | High | 1 |
| Overall Weighted Mean | 3.06 | High | |

Based on the data in Table 3, the workload level of radiologic technologists concerning administrative tasks is high, with an overall weighted mean of 3.06. The highest-rated item, with a weighted mean of 3.23, indicates that the electronic health record system is considered efficient and user-friendly. However, documentation requirements are seen as taking up a significant amount of clinical time, with a weighted mean of 3.02. Completing administrative tasks within regular shift hours and recording equipment quality control procedures both have a weighted mean of 3.06, suggesting that while these tasks are manageable, they still pose a challenge. Administrative meetings are the least interfering with clinical duties, with a weighted mean of 2.94. These findings highlight the need for streamlined administrative processes to ensure that radiologic technologists can focus more on their clinical responsibilities without being overburdened by administrative tasks.

These findings aligned with Farrasizdihar et al. (2021) have classified general organizational work as an important part of radiologic technologist's work-related tasks in balancing clinical and non-clinical duties. They found that non-patient care activities took up a significant part of the employees' working day and could potentially interfere with patient care activities. Jenkins et al. (2023) added to the previous discussion of administrative tasks introduced in the role of radiologic technologists, explaining how the use of electronic health records and digital images has added a new dimension to the overload of responsibilities in the profession.

Table 4. Workload level of Radiologic Technologists:Shift Patterns

| Shift Patterns | Weighted Mean | Verbal Interpretation | Rank |
|--|---------------|-----------------------|------|
| 1. My work schedule allows adequate rest between shifts | 2.83 | High | 2 |
| 2. The rotation between day and night shifts is well-managed | 2.88 | High | 1 |
| 3. I have sufficient breaks during my shift | 2.52 | High | 5 |
| 4. The distribution of weekend duties is fair | 2.80 | High | 4 |
| 5. My shift schedule accommodates my personal needs | 2.82 | High | 3 |
| Overall Weighted Mean | 2.77 | High | |

Based on the data in Table 4, the workload level of radiologic technologists concerning shift patterns is high, with an overall weighted mean of 2.77. The highest-rated item, with a weighted mean of 2.88, indicates that the rotation between day and night shifts is well managed. Adequate rest between shifts and the accommodation of personal needs are also rated relatively

high, with weighted means of 2.83 and 2.82, respectively. The distribution of weekend duties is considered fair, with a weighted mean of 2.80. However, the sufficiency of breaks during shifts is rated the lowest, with a weighted mean of 2.52, suggesting that this is an area needing improvement. These findings highlight the importance of optimizing shift patterns to ensure that radiologic technologists have adequate rest, fair distribution of duties, and sufficient breaks to maintain their well-being and job satisfaction.

These findings aligned with Zanardo et al. (2022) in examining the relationship between work schedules and professional wellbeing and found out that working schedules significantly influence burnout levels among radiation therapy technologists. Their research identified that irregular shift patterns and inadequate recovery periods between shifts were particularly problematic for healthcare imaging professionals, contributing to increased stress and reduced job satisfaction. They also found out from the survey that there are certain risks that influence burnout levels; gender differences, family responsibilities, and working schedules, highlighting the importance of considering individual factors in schedule design.

Table 5. Workload level of Radiologic Technologists: Imaging Accuracy

| Imaging Accuracy | Weighted Mean | Verbal Interpretation | Rank |
|---|----------------------|------------------------------|-------------|
| 1. I consistently produce diagnostic quality images on first attempt | 3.29 | Very High | 4 |
| 2. I rarely need to repeat examinations due to positioning errors | 3.18 | High | 5 |
| 3. My images consistently meet department quality standards | 3.40 | Very High | 2.5 |
| 4. I maintain image quality even during busy periods | 3.40 | Very High | 2.5 |
| 5. I effectively adapt technical factors for different patient conditions | 3.42 | Very High | 1 |
| Overall Weighted Mean | 3.34 | Very High | |

Based on the data in Table 5, the workload level of radiologic technologists concerning imaging accuracy is very high, with an overall weighted mean of 3.34. The highest-rated item, with a weighted mean of 3.42, indicates that technologists are highly effective in adapting technical factors for different patient conditions. Consistently meeting department quality standards and maintaining image quality during busy periods are also rated very high, both with a weighted mean of 3.40. Producing diagnostic quality images on the first attempt is another strength, with a weighted mean of 3.29. However, the need to repeat examinations due to positioning errors, while still rated high, has the lowest weighted mean of 3.18. These findings suggest that radiologic technologists are proficient in producing high-quality images and adapting to various patient conditions, although there is some room for improvement in minimizing positioning errors.

These findings align with In establishing quality assurance standards for modern imaging, Wong et al. (2024) conducted a systematic study on the quality assurance of image registration in radiotherapy. In an international cross-sectional workshop with multiple experts, they realized that there are several compatible methods of quality assessment ranging from simple visual inspection to quantitative indices that are complex. Their work stressed that the quality measurements should contain technical parameters and organizational factors, where the attention was paid to the relation between the implant position and clinical conditions, providing a multidimensional approach to quality assessment.

Table 6. Summary Table of the Workload level of Radiologic Technologists:

| | Weighted Mean | Verbal Interpretation | Rank |
|-------------------------|----------------------|------------------------------|-------------|
| 1. Patient Volume | 3.30 | Very High | 2 |
| 2. Procedure Complexity | 3.26 | Very High | 3 |
| 3. Administrative Tasks | 3.06 | High | 4 |
| 4. Shift Patterns | 2.77 | High | 5 |
| 5. Imaging Accuracy | 3.34 | Very High | 1 |
| Overall Weighted Mean | 3.15 | High | |

Based on the summary table of the workload level of radiologic technologists, the overall workload is high, with an overall weighted mean of 3.15. Imaging accuracy is rated the highest, with a weighted mean of 3.34, indicating that technologists are highly proficient in producing diagnostic quality images and adapting to various patient conditions. Patient volume follows closely with a weighted mean of 3.30, suggesting that managing the number of patients is a significant aspect of their workload. Procedure complexity is also rated very high, with a weighted mean of 3.26, reflecting the advanced technical skills required for complex imaging procedures.

Administrative tasks, with a weighted mean of 3.06, are perceived as high but less burdensome compared to patient volume and procedure complexity. Shift patterns have the lowest weighted mean of 2.77, indicating that while they are manageable, there are concerns regarding adequate rest, fair distribution of duties, and sufficient breaks.

These findings highlight the need for continued support and resources to ensure that radiologic technologists can maintain high standards of performance without feeling overwhelmed. Addressing issues related to shift patterns and administrative tasks could further enhance their efficiency and job satisfaction. This aligns with The Job Demands-Resources Theory (Makanjee et al. (2021) , which links job demands encompass workload, technical complexity, and time constraints, while resources include supervisory support, technological infrastructure, and professional development opportunities.

3.2 The Burnout Levels of Radiologic Technologists

Table 7. Burnout Levels of Radiologic Technologists: Emotional Exhaustion

| Emotional Exhaustion | Weighted Mean | Verbal Interpretation | Rank |
|--|----------------------|------------------------------|-------------|
| 1. I feel emotionally drained from my work | 2.97 | High | 2 |
| 2. I feel used up at the end of the workday | 3.12 | High | 1 |
| 3. I feel fatigued when I get up in the morning | 2.92 | High | 3 |
| 4. Working with people all day is really a strain for me | 2.66 | High | 4 |
| 5. I often find myself feeling frustrated or irritated during my shift | 2.54 | High | 5 |
| Overall Weighted Mean | 2.84 | High | |

Based on the data in Table 7, the burnout levels of radiologic technologists, specifically in terms of emotional exhaustion is high, with an overall weighted mean of 2.84. The highest-ranked item, with a weighted mean of 3.12, indicates that many technologists feel used up at the end of the workday. Feeling emotionally drained from work follows closely, with a weighted mean of 2.97, highlighting significant emotional fatigue. Morning fatigue is also a common issue, with a weighted mean of 2.92. Working with people all day is perceived as a strain, with a weighted mean of 2.66, and feelings of frustration or irritation during shifts, while still high, have the lowest weighted mean of 2.54. These findings suggest that emotional exhaustion is a prevalent issue among radiologic technologists, underscoring the need for interventions to support their mental health and well-being.

These findings align with Singh et al. (2023) specifically investigated emotional exhaustion among radiologic technologists in high-volume healthcare facilities through a cross-sectional study of medical imaging professionals. Their research found that a significant percentage of participants reported high levels of emotional exhaustion, characterized by feelings of being emotionally depleted, experiencing chronic fatigue, and having reduced emotional energy for patient engagement, establishing the prevalence of this burnout dimension in radiologic practice.

Table 8. Burnout Levels of Radiologic Technologists: Depersonalization

| Depersonalization | Weighted Mean | Verbal Interpretation | Rank |
|--|----------------------|------------------------------|-------------|
| 1. I feel I treat patients as impersonal objects | 2.25 | Low | 2.25 |
| 2. I've become more callous toward people | 2.20 | Low | 2.20 |

| | | | |
|--|------|------------|------|
| 3. I worry this job is hardening me emotionally | 2.43 | Low | 2.43 |
| 4. I don't really care what happens to some patients | 1.98 | Low | 1.98 |
| 5. I feel patients blame me for their problems | 2.14 | Low | 2.14 |
| Overall Weighted Mean | 2.20 | Low | 2.20 |

Based on the data in Table 8, the burnout levels of radiologic technologists in terms of depersonalization is low, with an overall weighted mean of 2.20. The highest-ranked item, with a weighted mean of 2.43, indicates that some technologists worry that their job is hardening them emotionally. Treating patients as impersonal objects and becoming more callous toward people are also concerns, with weighted means of 2.25 and 2.20, respectively. However, the lowest-ranked item, with a weighted mean of 1.98, suggests that most technologists do not feel indifferent about what happens to their patients. Additionally, feeling blamed by patients for their problems has a weighted mean of 2.14. These findings suggest that while there are some concerns about emotional hardening and depersonalization, overall, radiologic technologists maintain a relatively low level of depersonalization in their interactions with patients. This indicates a need for continued support to address these concerns and promote emotional well-being.

These findings align with Akudjedu et al. (2020) which found that emotional exhaustion was often a precursor to depersonalization, indicating that these burnout dimensions are related in terms of time and offering an understanding of the development of burnout. Their study described how burnout was initially demonstrated by more irritability and fatigue, often in the way they dealt with others at the workplace, before the technologists themselves could notice it.

Table 9. Burnout Levels of Radiologic Technologists: Personal Accomplishment

| Personal Accomplishment | Weighted Mean | Verbal Interpretation | Rank |
|--|----------------------|------------------------------|-------------|
| 1. I understand how my patients feel | 3.52 | Very High | 1 |
| 2. I deal effectively with patients' problems | 3.29 | Very High | 5 |
| 3. I positively influence people's lives | 3.40 | Very High | 2 |
| 4. I feel energetic | 3.11 | Very High | 4 |
| 5. I create a relaxed atmosphere with patients | 3.31 | Very High | 3 |
| Overall Weighted Mean | 3.33 | Very High | |

Based on the data in Table 9, the burnout levels of radiologic technologists in terms of personal accomplishment is very high, with an overall weighted mean of 3.33. The highest-ranked item, with a weighted mean of 3.52, indicates that technologists feel they understand how their

patients feel, suggesting strong empathy and patient connection. Positively influencing people's lives and creating a relaxed atmosphere with patients are also highly rated, with weighted means of 3.40 and 3.31, respectively. Dealing effectively with patients' problems and feeling energetic are rated slightly lower but still very high, with weighted means of 3.29 and 3.11. These findings suggest that radiologic technologists experience a strong sense of personal accomplishment in their roles, which can help mitigate the effects of burnout and enhance job satisfaction.

These findings align with Schneider et al. (2021) discussed the dimension of personal accomplishment as part of their systematic review of links between emotional intelligence and burnout in healthcare organizations. Their work identified that personal accomplishment represents an important aspect of professional well-being that can be compromised under conditions of sustained workplace stress.

Table 10. Summary Table of the Burnout levels of Radiologic Technologists:

| | Weighted Mean | Verbal Interpretation | Rank |
|----------------------------|----------------------|------------------------------|-------------|
| 1. Emotional Exhaustion | 2.84 | High | 2 |
| 2. Depersonalization | 2.20 | Low | 3 |
| 3. Personal Accomplishment | 3.33 | Very High | 1 |
| Overall Weighted Mean | 2.79 | High | |

Based on the summary table of the burnout levels of radiologic technologists, the overall burnout level is high, with an overall weighted mean of 2.79. Personal accomplishment is rated the highest, with a weighted mean of 3.33, indicating that technologists feel a strong sense of achievement and positively influence their patients' lives. Emotional exhaustion follows with a weighted mean of 2.84, highlighting significant emotional fatigue among technologists. Depersonalization is rated the lowest, with a weighted mean of 2.20, suggesting that while there are some concerns about emotional hardening, technologists generally maintain a low level of depersonalization in their interactions with patients. These findings underscore the importance of addressing emotional exhaustion and supporting technologists' sense of personal accomplishment to mitigate burnout and enhance job satisfaction.

These findings align with Maslach's Burnout Theory, which identifies three key dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Recent studies by Singh et al. (2023) have validated these dimensions' significance in diagnostic imaging departments, where technical competence and patient care intersect with workplace pressures.

3.3 The Level of patient care quality of Radiologic Technologists

Table 11. Level of patient care quality of Radiologic Technologists: Patient Safety

| Patient Safety | Weighted Mean | Verbal Interpretation | Rank |
|---|----------------------|------------------------------|-------------|
| 1. I verify patient identity properly | 3.74 | Very High | 1 |
| 2. I screen for all contraindications | 3.60 | Very High | 5 |
| 3. I use appropriate radiation protection | 3.66 | Very High | 3 |
| 4. I monitor patients during procedures | 3.63 | Very High | 4 |
| 5. I follow infection control protocols | 3.68 | Very High | 2 |
| Overall Weighted Mean | 3.66 | Very High | |

Based on the data in Table 11, the level of patient care quality provided by radiologic technologists, specifically in terms of patient safety, is very high, with an overall weighted mean of 3.66. The highest-ranked item, with a weighted mean of 3.74, indicates that technologists are diligent in verifying patient identity, ensuring accurate and safe patient care. Following infection control protocols and using appropriate radiation protection are also highly rated, with weighted means of 3.68 and 3.66, respectively. Monitoring patients during procedures and screening for contraindications are similarly rated very high, with weighted means of 3.63 and 3.60. These findings suggest that radiologic technologists maintain a high standard of patient safety, emphasizing the importance of proper identification, infection control, and radiation protection in their practice.

These findings align with Akudjedu et al. (2022) conducted a systematic review of safety practices in diagnostic imaging across multiple tertiary hospitals, analyzing both incident reports and preventive systems. Their research identified that safety outcomes in medical imaging encompass multiple dimensions including radiation protection, procedural safety, contrast media management, and error prevention systems.

Table 12. Level of patient care quality of Radiologic Technologists : Patient Experience

| Patient Experience | Weighted Mean | Verbal Interpretation | Rank |
|--|----------------------|------------------------------|-------------|
| 1. I explain procedures clearly | 3.69 | Very High | 3 |
| 2. I address patient concerns promptly | 3.60 | Very High | 8 |
| 3. I ensure patient comfort | 3.69 | Very High | 3 |
| 4. I maintain patient privacy | 3.69 | Very High | 3 |
| 5. I demonstrate professional demeanor | 3.58 | Very High | 9 |

| | | | |
|--|------|------------------|----|
| 6.I effectively communicate examination procedures to patients | 3.65 | Very High | 7 |
| 7.I respond promptly to patient concerns and questions | 3.68 | Very High | 6 |
| 8.I maintain professional demeanor even under pressure | 3.54 | Very High | 10 |
| 9.I ensure patient comfort throughout examinations | 3.69 | Very High | 3 |
| 10.I respect patient privacy and dignity | 3.69 | Very High | 3 |
| Overall Weighted Mean | 3.65 | Very High | |

Based on the data in Table 12, the level of patient care quality provided by radiologic technologists, specifically in terms of patient experience, is very high, with an overall weighted mean of 3.65. The highest-rated items, each with a weighted mean of 3.69, indicate that technologists excel in explaining procedures clearly, ensuring patient comfort, maintaining patient privacy, and respecting patient dignity. Promptly responding to patient concerns and questions, as well as effectively communicating examination procedures, are also highly rated, with weighted means of 3.68 and 3.65, respectively. Demonstrating a professional demeanor, even under pressure, is rated slightly lower but still very high, with a weighted mean of 3.54. These findings suggest that radiologic technologists provide a high standard of patient care, emphasizing clear communication, patient comfort, privacy, and professionalism in their interactions with patients.

These findings align with Hyde and Cradock (2022) aimed at investigating communication patterns in diagnostic imaging settings. Their study focused on professional communication competency and its multiple aspects, the quality of service delivery, and several quality factors. They were able to show that communication effectiveness is a systematic aspect of healthcare that has an impact on the general and specific aspects of service delivery.

Table 13. Summary Table of the Level of Patient Care Quality of Radiologic Technologists:

| | Weighted Mean | Verbal Interpretation | Rank |
|-----------------------|----------------------|------------------------------|-------------|
| 1. Patient Safety | 3.66 | Very High | 1 |
| 2. Patient Experience | 3.65 | Very High | 2 |
| Overall Weighted Mean | 3.66 | Very High | |

Based on the summary table of the level of patient care quality provided by radiologic technologists, both patient safety and patient experience as very high, with weighted means of 3.66 and 3.65, respectively. Patient safety is ranked slightly higher, indicating a strong emphasis on verifying patient identity, following infection control protocols, and using appropriate radiation protection. Patient experience is also highly rated, reflecting the technologists' commitment to clear communication, ensuring patient comfort, maintaining privacy, and demonstrating professionalism. The overall weighted mean of 3.66 underscores the high standard of care

maintained by radiologic technologists, prioritizing both the safety and overall experience of their patients.

These findings align with Brady (2022), which highlighted the patient safety indicators in diagnostic imaging departments. Their analysis established that maintaining patient safety required not just technical competence but also adequate time for proper assessment, preparation, and monitoring of patients throughout imaging procedures. Tuvevsson and Börjesson (2020) used different and extensive patient-centered approaches. They found that patient experience in diagnostic imaging depends on the wait time, the quality of communication, physical comfort during the procedures, perceived empathy of the providers and the technical confidence of the staff conducting the examination, which gives a comprehensive view of patient experience.

3.4 Relationship Between the Respondents' Workload and Burnout Level

Table 14. Relationship Between the Respondents' Workload and Burnout Level

| Variables | Statistical Treatment (Pearson's) | p-value | Decision | Interpretation |
|----------------------|--------------------------------------|---------|------------------------|-----------------|
| Workload and burnout | $r=.089$ (negligible correlation) | .479 | Failed to reject H_0 | Not Significant |
| **Significant @.01 | | | | |

Based on the data in Table 14, the relationship between the respondents' workload and burnout level was analyzed using Pearson's correlation coefficient. The results show a negligible correlation ($r = .089$) between workload and burnout, with a p-value of .479. Since the p-value is greater than the significance level of .01, we fail to reject the null hypothesis (H_0). This indicates that there is no significant relationship between the workload of radiologic technologists and their burnout levels. This means that workload has no bearing on the burnout level. Therefore, other factors may be contributing to burnout, and further investigation is needed to identify these factors and address them effectively.

These findings are consistent with The Job Demands-Resources Theory (Makanjee et al. (2021) encompass workload, technical complexity, and time constraints, while resources include supervisory support, technological infrastructure, and professional development opportunities.

3.5. Relationship Between the Respondents' Workload and Quality of Patient Care

Table 15. Relationship Between the Respondents' Workload and Quality of Patient Care

| Variables | Statistical Treatment (Pearson's) | p-value | Decision | Interpretation |
|---------------------------|--------------------------------------|---------|------------------------|-----------------|
| Workload and patient care | $r=.067$ (negligible correlation) | .594 | Failed to reject H_0 | Not Significant |
| *Significant @.05 | | | | |

Based on the data in Table 15, the relationship between the respondents' workload and the quality of patient care was analyzed using Pearson's correlation coefficient. The results show a negligible correlation ($r = .067$) between workload and patient care, with a p-value of .594. Since the p-value is greater than the significance level of .05, we fail to reject the null hypothesis (H_0). This indicates that there is no significant relationship between the workload of radiologic technologists and the quality of patient care they provide. This means that workload has no bearing on the quality of patient care. Therefore, other factors may be influencing the quality of patient care, and further research is needed to identify and address these factors effectively.

These findings were consistent with Social Exchange Theory (SET) as defined by Elsholz et al. (2021) demonstrated how perceived organizational support can mitigate the negative impacts of high workload on healthcare providers' well-being and productivity.

3.6 Relationship Between the Respondents' Burnout Level and Quality of Patient Care

Table 16. Relationship Between the Respondents' Burnout Level of Quality of Patient Care

| Variables | Statistical Treatment (Pearson's) | p-value | Decision | Interpretation |
|--------------------------|--------------------------------------|---------|------------------------|-----------------|
| Burnout and patient care | $r=.148$ (negligible correlation) | .241 | Failed to reject H_0 | Not Significant |
| *Significant @.05 | | | | |

Based on the data in Table 16, the relationship between the respondents' burnout level and the quality of patient care was analyzed using Pearson's correlation coefficient. The results show a negligible correlation ($r = .148$) between burnout and patient care, with a p-value of .241. Since the p-value is greater than the significance level of .05, we fail to reject the null hypothesis (H_0). This indicates that there is no significant relationship between the burnout levels of radiologic technologists and the quality of patient care they provide. This means that burnout level has no bearing on the quality of patient care. Therefore, other factors may be influencing the quality of patient care, and further research is needed to identify and address these factors effectively.

These findings were consistent with Maslach's Burnout Theory as defined by Singh et al. (2023) have validated these dimensions' significance in diagnostic imaging departments, where technical competence and patient care intersect with workplace pressures which particularly relevant to radiologic technologists, where emotional exhaustion manifests as feeling emotionally depleted by work demands, depersonalization appears as reduced patient engagement, and diminished personal accomplishment reflects decreased perceived competence in patient care delivery.

3.7 Proposed Action Plan to Reduce Workload-Induced Burnout and Improved Quality of Patient Care Among Radiologic Technologists

Rationale:

Radiologic technologists (RTs) play a crucial role in the healthcare system, providing essential diagnostic imaging services. However, excessive workload can have substantial impact on their efficiency in providing high quality of patient care and also affects their working conditions and patient interactions. To address these difficulties, an action plan is needed to improved quality of patient care, ensure productive radiologic technologist, and maintain a healthy working environment. By implementing these it may help to develop solutions in reducing burnout and improved the high standard quality of patient care among radiologic technologist in tertiary government hospitals in Metro Manila.

4. CONCLUSIONS

The following conclusions were drawn based on the findings of the study.

1. Radiologic technologists in selected tertiary government hospitals in Metro Manila experience a very high workload, particularly in terms of patient volume, procedure complexity, and imaging accuracy. Administrative tasks and shift patterns also contribute to their workload but to a lesser extent.
2. Emotional exhaustion is a significant issue among radiologic technologists, while depersonalization levels are relatively low. Radiologic Technologists experience a strong sense of personal accomplishment in their roles.
3. The quality of patient care provided by radiologic technologists is very high, with strong emphasis on patient safety and patient experience.
4. The amount of work does not directly causes burnout. Burnouts depend on the variety of things like personal feeling and the work environment.
5. The workload has no bearing on the quality of patient care. Patient care quality is determined by other factors like available resources and experience of health care providers.
6. The burnout level has no bearing on the quality of patient care. The quality of patient care depends on the factors beyond the health care providers burnout level.

7. There is a need to proposed action plan to Reduce Workload-Induced Burnout and Improved Quality of Patient Care Among Radiologic Technologists in Metro Manila.

Proposed Action Plan to Reduce Workload-Induced Burnout and Improved Quality of Patient Care Among Radiologic Technologists

Rationale:

Radiologic technologists (RTs) play a crucial role in the healthcare system, providing essential diagnostic imaging services. However, excessive workload can have substantial impact on their efficiency in providing high quality of patient care and also affects their working conditions and patient interactions. To address these difficulties, an action plan is needed to improved quality of patient care, ensure productive radiologic technologist, and maintain a healthy working environment. By implementing these it may help to develop solutions in reducing burnout and improved the high standard quality of patient care among radiologic technologist in tertiary government hospitals in Metro Manila.

Action Plan to Reduce Workload-Induced Burnout and Improved Quality of Patient Care Among Radiologic Technologists

| Areas of Concern | Strategy/ Tasks | Person(s) Responsible | Time Frame | Resources | Success Indicator |
|--------------------------------------|--|---|-------------------|------------------------------|---|
| Operational workload concerns | Evaluates regularly the staff workload, work schedule and patient volume. | HR Department, Radiology Department Head | Quarterly | Softwares, surveys | At least 95% staff report workload management |
| Upgrading Equipments | Invest high end modality/technology to improve work efficiency | Finance Department, Procurement | Annually | Budget Allocation, Suppliers | At least 95% machine replace or upgrade |
| Workplace Burnouts | Offers burnout management workshops, team-building activities/outings exercises and counseling | HR Department, Radiology Department Head, | Semi-Annually | Modules, supplies | At least 95% of staff reports productivity |

| | | | | | |
|--------------------------------|--|------------------|-----------|--|--|
| | | Chief Radtech | | | |
| Professional Issues | Provide training/seminar programs for continues learning | Training Team | Quarterly | Certificates, training Venue s, supplies | At least 95% of staff attended seminars |

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