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Invisible Frontliners in the Eyes of the Youth: Perceptions of Grade 12 Students on Radiologic Technologists

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ABSTRACT

In the context of growing interest in healthcare careers and the importance of accurate career awareness among senior high school students, this study explored the perception of Grade 12 students on Radiologic Technologists as healthcare professionals, focusing on how learning experiences and media exposure influence their knowledge, stereotypes, perceived recognition, and career intention toward Radiologic Technology. The respondents comprised 222 Grade 12 students from the University of Perpetual Help System DALTA (UPHSD) Calamba Campus, exceeding the required sample size of 187. Data were collected using a structured survey questionnaire measuring demographic profile, level of learning and media exposure, knowledge about the profession, stereotypes, perceived professional recognition, and career intention. Findings revealed that respondents demonstrated moderate to high levels of awareness of the profession. However, misconceptions and stereotypes persisted, particularly the perception that Radiologic Technologists are limited to technical tasks rather than being integral members of the healthcare team. Learning experiences and media exposure significantly influenced students' knowledge and stereotypes, with greater exposure leading to a more accurate understanding of the profession. Knowledge and stereotypes were found to significantly predict students' perceived professional recognition and their intention to pursue Radiologic Technology as a career. Analysis of perceptions across demographic profiles revealed significant differences in selected variables, particularly in the academic strand. Based on these findings, the study proposes strategies to strengthen career orientation programs, enhance media representation of Radiologic Technology, and integrate comprehensive information about the profession to improve awareness, reduce misconceptions, and increase students' interest in pursuing Radiologic Technology.

Keywords: *Radiologic Technology, student perception, media exposure, knowledge, stereotypes, professional recognition, career intention*

INTRODUCTION

Radiologic Technologists (RTs) are essential members of the healthcare team, responsible for performing imaging procedures such as X-rays, CT scans, MRIs, and fluoroscopy to assist in the diagnosis and treatment of diseases. Their work requires technical expertise, critical thinking, and a strong understanding of anatomy, pathology, radiation safety, and patient care. In the Philippines, RTs are licensed professionals who have undergone rigorous academic and clinical training to ensure safe and accurate

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diagnostic imaging (Studocu, 2023). Despite their vital contributions, the profession often remained underrecognized compared to other healthcare roles such as doctors and nurses.

This invisibility became particularly evident during the COVID-19 pandemic. When the virus reached the Philippines in early 2020 (Amit et al., 2021), healthcare workers were at the forefront of the crisis. While physicians and nurses were publicly celebrated as heroes, Radiologic Technologists quietly worked in high-risk environments, performing crucial chest X-rays and CT scans for COVID-19 patients to detect lung damage and guide treatment decisions (Varadarajan et al., 2021). Their indispensable role, however, was rarely mentioned in media coverage or public discourse, reinforcing what Gonzales et al. (2022) described as the "silent professional identity" of Filipino RTs.

This lack of visibility was not only an issue of public recognition but also influenced how the younger generation perceived the profession. Studies have shown that allied health professionals, such as radiologic technologists, often face low visibility and limited recognition compared to other healthcare workers (Al Shamsi et al., 2022). Bautista and Tan (2023) further noted that students' lack of knowledge about lesser-known healthcare professions affected how they valued and understood their importance within the healthcare system. Without proper exposure and accurate information, students formed stereotypes or misconceptions that diminished interest in pursuing these careers.

The issue affected Grade 12 students at a critical stage of career exploration under the senior high school curriculum. These students were introduced to various professions through career guidance programs, yet their awareness of Radiologic Technology remained limited. Previous studies among allied health students revealed that misconceptions and lack of exposure influenced their motivation and career interest in radiography (Rosales, 2023; Alamer et al., 2023). Given that the Philippines was among the world's most active social media users (Openr, 2022), the way healthcare professionals were portrayed on these platforms significantly shaped young people's perceptions and career choices.

Despite the growing demand for imaging professionals in modern healthcare, few studies have specifically examined Filipino Grade 12 students' perceptions of Radiologic Technology as a profession, particularly the interplay between their knowledge, stereotypes, perceived professional recognition, and intention to pursue RT as a career. Existing literature largely focused on allied health students, media representation, or general public awareness, leaving a gap in understanding how senior high school students formed views about this profession. Addressing this gap was crucial because misconceptions and a lack of awareness contributed to the persistent under-recognition of RTs and discouraged students from considering Radiologic Technology as a viable career path.

Therefore, this study sought to explore Grade 12 students' perceptions of Radiologic Technology as a profession, focusing on the relationships among their knowledge, stereotypes, perceived professional recognition, and career intentions. Guided by Social Cognitive Theory and Cultivation Theory, the study assumed that students' perceptions were shaped by their learning experiences and media exposure. The study aimed to provide educators, guidance counselors, and policymakers with evidence-based insights to design career orientation and awareness programs that highlight the essential role of Radiologic Technologists in modern healthcare.

Theoretical Framework

This study was grounded in two complementary theories that explained how perceptions are formed and influenced by both personal experiences and media exposure: the Social Cognitive Theory and the Cultivation Theory. Together, these frameworks provided a foundation for understanding how Grade 12 students developed their views toward the Radiologic Technology profession through learning, observation, and long-term media influence.

Social Cognitive Theory (Bandura, 1986; Islam et al., 2023) posited that human behavior and perception resulted from the continuous interaction among personal factors, environmental influences, and behavioral patterns, a concept known as reciprocal determinism. Learning occurred not only through direct

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experience but also through observational learning, in which individuals formed beliefs and attitudes by observing others' behaviors and their outcomes. In the context of this study, students' perceptions of Radiologic Technologists were shaped by personal experiences (e.g., undergoing an imaging procedure or interacting with RTs), environmental influences (e.g., information from teachers, peers, or family), and observed representations in media. Thus, SCT helped explain how both real-life encounters and vicarious learning experiences influenced students' knowledge, stereotypes, and perceptions of professional recognition for Radiologic Technologists.

Cultivation Theory (Gerbner, 1998; Elkefi et al., 2024) supported the study by showing how mass media shaped long-term views of social roles. Exposure to media, whether through social media, television, or news, affected how people viewed Radiologic Technologists. It either highlighted their importance as frontliners or led to their "invisibility" compared to doctors and nurses. This theory explained why consistent media portrayals influenced how society recognized certain professions.

By combining these viewpoints, the study suggested that media exposure, school curriculum, personal experiences, and social stories played major roles in how students viewed the roles, duties, and contributions of Radiologic Technologists. Grounding the study in these theories ensured that the research was guided by well-known explanations of how perceptions were shaped, strengthened, and maintained.

Conceptual Framework

The paradigm illustrated how Grade 12 students' learning experiences and media exposure shaped their knowledge and stereotypes about Radiologic Technology, which, in turn, influenced their perceived professional recognition and, ultimately, their career intentions to pursue the field.

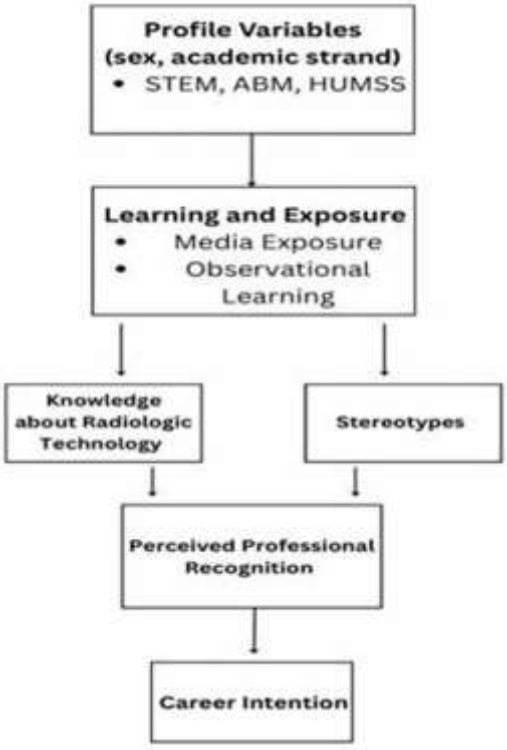


Figure 1. *Conceptual Paradigm*

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The conceptual paradigm of this study illustrated how Grade 12 students' learning experiences and media exposure influenced their knowledge, stereotypes, and perceptions of Radiologic Technology as a profession. The paradigm assumed that students' understanding of Radiologic Technologists was not formed in isolation but was shaped by various environmental and social factors. Profile variables, such as sex and academic strand, influenced how students acquired information about Radiologic Technology. Through the combined influence of learning experiences and media exposure, students developed certain levels of knowledge and stereotypes about the profession, which then affected how they perceived its professional recognition in the healthcare field. Ultimately, these perceptions influenced their intention to consider Radiologic Technology as a potential career.

This study was grounded on Social Cognitive Theory (Bandura, 1986), which posited that individuals acquired knowledge, attitudes, and behaviors through observation, imitation, and interaction within their social environment. According to this theory, learning occurred not only through direct experience but also by observing others and the consequences of their actions. In this research, students learned about the profession of Radiologic Technology through school activities, health-related programs, family members working in the medical field, and personal encounters in hospitals. These learning experiences contributed to their cognitive understanding of the role, responsibilities, and importance of Radiologic Technologists in healthcare. Furthermore, their observations influenced their self-efficacy and expectations toward pursuing the profession. When students observed positive role models or professional recognition of Radiologic Technologists, they were more likely to develop favorable perceptions and a stronger intention to consider the field as a career option.

Complementing this, Cultivation Theory (Gerbner, 1969) explained how long-term media exposure shapes people's perceptions of reality. In this study, media served as a powerful socializing agent, constructing images and narratives about healthcare professionals. However, Radiologic Technologists were rarely featured in television programs, films, or online platforms compared to doctors and nurses. This lack of representation led students to perceive the profession as less significant or invisible within the healthcare hierarchy. Consequently, the limited or stereotypical portrayals of Radiologic Technologists in the media cultivated misconceptions that affected students' perceptions of the profession's recognition and desirability. Hence, the theory underscored how media exposure contributed to the formation of stereotypes and the perceived status of Radiologic Technologists among youth audiences.

Integrating these two theories, the paradigm demonstrated that both social learning and media influence shaped students' cognitive and attitudinal perceptions. Social Cognitive Theory explained how personal experiences and observational learning shape knowledge and professional appreciation, while Cultivation Theory highlighted how repeated media exposure shapes stereotypes and the profession's visibility. Together, they explained the pathway from external influences (learning and media exposure) to internal cognitive processes (knowledge and stereotypes), which, in turn, determined perceptual and behavioral outcomes (professional recognition and career intention). Thus, the paradigm provided a comprehensive view of how the youth, as future college entrants, formed their understanding and valuation of Radiologic Technology in the context of both social and media influences.

Statement of the Problem

This study sought to investigate Grade 12 students' perceptions of Radiologic Technologists as healthcare frontliners. Specifically, it aimed to answer the following questions:

1. What was the profile of the respondents in terms of:
   1.1. Sex; and
   1.2. Academic strand?
2. What was the students' level of perception in terms of:
   2.1. Learning and media exposure;
   2.2. Knowledge about the profession;

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2.3. Stereotypes toward Radiologic Technology;
2.4. Perceived professional recognition; and
2.5. Career intention to pursue Radiologic Technology?

3. Were there significant differences in the students' perceptions when grouped according to their profile variables?
4. Did learning experiences and media exposure significantly influence the students' knowledge and stereotypes about Radiologic Technology?
5. Did the students' knowledge and stereotypes significantly predict their perceived professional recognition and career intention toward the profession?

Literature Review

Learning & Media Exposure

Studies directly addressing the technological component demonstrated that early and frequent exposure to digital tools was crucial. Arif et al. (2024) found a strong correlation between students' higher exposure to technological media and AI-related learning resources and their subsequent confidence in performing imaging tasks and adapting to emerging technologies. This preparedness, they argued, was significantly boosted by institutional support and the effective integration of AI topics within the curriculum, emphasizing that access to updated digital resources determined both knowledge acquisition and professional readiness.

This finding was further supported by Humphries et al. (2024), who explored student perceptions of AI integration. Their work confirmed that students with greater access to technological media, such as AI tutorials and online simulations, felt more competent in managing imaging procedures and workflows. Importantly, their study illustrated how technology not only enhanced technical confidence but also reduced apprehension, thereby reinforcing Arif et al.'s claim that digital exposure fostered adaptability.

Furthermore, in assessing career motivations, one survey found that students with greater exposure to virtual learning tools and multimedia tutorials reported greater interest and confidence in pursuing a career in radiologic technology. Taken together, these studies highlighted media exposure as a key driver of engagement and professional growth. However, the literature was equally clear that technological exposure alone was insufficient; it had to be embedded within a structured, comprehensive educational framework. Brennan's (2022) narrative review examined global shifts in radiography education, noting that while increased reliance on digital platforms and virtual simulations reshaped learning, media exposure required structured guidance and contextual learning to be truly effective. In other words, while technology provided the foundation, mentorship and structured curricula were necessary to transform exposure into competence.

This necessity for multimodal experience was borne out in clinical settings. Ingrassia (2020) revealed that students who benefited from structured clinical rotations, strong mentorship, and exposure to multiple imaging modalities developed stronger practical skills. Here, digital resources, such as online modules, reinforced procedural knowledge gained through hands-on experience. Similarly, Griffiths et al. (2024) emphasized that repeated hands-on exposure in clinical placements improved procedural skills, while integrating digital learning platforms during that training enhanced theoretical understanding and facilitated reflective practice. Collectively, these findings demonstrated that technology-mediated learning was most effective when paired with structured clinical immersion.

Knowledge of the Profession

Research by Alsharif et al. (2022) found that students who benefited from structured theoretical and practical instruction demonstrated significantly greater knowledge of imaging modalities and radiologic procedures than peers who relied on independent study. This finding was reinforced by Chandra et al.

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(2023), who similarly demonstrated that structured exposure encompassing both classroom instruction and practical simulations was instrumental in enhancing students' comprehension of professional roles, responsibilities, and clinical workflows. Together, these studies underscored the importance of combining didactic instruction with experiential reinforcement to build a solid professional knowledge base.

Building on this, the integration of digital tools was highlighted as a powerful catalyst for improved comprehension. Alsharif et al. (2022) noted that leveraging multimedia resources, such as instructional videos and interactive modules, enhanced students' ability to grasp complex imaging techniques. Echoing this, Chandra et al. (2023) observed that multimedia learning tools, including case studies and interactive platforms, significantly improved retention and application of technical concepts. Likewise, Mahmood et al. (2021) concluded that early incorporation of interactive learning materials into the pre-clinical curriculum contributed to a foundational understanding of professional responsibilities and imaging techniques, while also mitigating misconceptions, particularly concerning radiation safety. These studies collectively suggested that digital tools acted as a bridge between theoretical instruction and practical application. Crucially, sustained engagement with this structured content was key to long-term mastery. Griffin et al. (2022) conducted a longitudinal study that established a positive correlation between consistent clinical exposure, supported by media-enhanced learning, and higher professional knowledge scores across multiple semesters. This finding demonstrated that repetition and reinforcement across time were essential for consolidating knowledge.

In contrast, a lack of structured, guided exposure tended to breed significant gaps in understanding. Alhassan and Ofori (2021) found that students with limited clinical exposure harbored misconceptions regarding the full scope of radiologic practice, particularly in diagnostic imaging and patient management. Similarly, Nguyen and Tran (2020) found that Vietnamese undergraduates without prior exposure to professional workshops and laboratory sessions often held inaccurate perceptions about job responsibilities and educational requirements. These deficits highlighted the risks of insufficient exposure, reinforcing the earlier conclusion that successful curricular strategies had to blend traditional lectures with interactive, media-supported resources and consistent practical application.

Stereotypes on Radiologic Technology

Research consistently showed that persistent stereotypes about radiologic professionals existed among health science students. This issue was largely attributed to limited direct clinical exposure and insufficient engagement with relevant professional media. Grimm et al. (2021), for instance, found that students who had minimal direct interaction in clinical settings often mistakenly believed that radiologic technologists primarily performed technical imaging tasks without meaningful patient interaction. However, their study also demonstrated that shadowing, clinical placements, and access to professional digital resources corrected these misconceptions, suggesting that structured exposure was a powerful antidote to stereotypes. Similarly, Alsharif et al. (2022) reported that university students commonly viewed radiologic technologists merely as equipment operators rather than integral members of the healthcare team. Their findings reinforced Grimm et al.'s conclusion by showing that hands-on training and media-based educational tools reshaped professional perceptions.

Choudhury and Ahmed (2020) further observed that undergraduate students frequently underestimated the decision-making and patient-care responsibilities radiologic technologists held. In this context, their findings highlighted that structured experiences such as clinical rotations, mentorship, and media-assisted learning effectively corrected these stereotypical views. Brennan (2022) echoed this point, noting that classroom instruction alone often left students with narrow perceptions, but interactive media and supervised clinical placements broadened their understanding of radiologic roles.

Adding to this evidence, Patel et al. (2023) showed that clinical shadowing and interactive learning platforms significantly reduced stereotypes, particularly those related to limited patient interaction and technical-only tasks. Consistent with these findings, Nguyen and Tran (2020) reported that Vietnamese

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health students often overlooked the diagnostic and patient-care aspects of radiologic work. However, workshops, media presentations, and clinical rotations helped them develop a more comprehensive understanding of professional duties. Finally, Humphries et al. (2024) reinforced the role of media, demonstrating that students who engaged with virtual simulations and digital case studies formed more accurate perceptions. In contrast, those without structured media exposure maintained common misconceptions.

Professional Recognition

Studies consistently demonstrated that undergraduate health science students frequently underestimated the professional recognition of radiologic technologists, perceiving the role as underappreciated despite its critical functions in diagnostics and patient care. For instance, the work of Alsharif et al. (2022) revealed that students often viewed radiologic technologists as less recognized compared to other healthcare professionals. Critically, this study emphasized that exposure to clinical environments and professional mentorship substantially enhanced students' understanding of the profession's responsibilities and consequently increased their perceived recognition. Building on this, Brennan (2022) further explored the theme, finding that students perceived recognition grew significantly when they engaged directly with clinical mentors and observed professional interactions within multidisciplinary teams. Taken together, these two studies highlighted that recognition was not inherent but cultivated through visibility, mentorship, and structured exposure.

Extending this perspective beyond clinical mentorship, Choudhury and Ahmed (2020) assessed professional recognition in more formal contexts. They found that students with prior exposure to professional conferences, workshops, and institutional recognition programs reported a higher awareness of the profession's contributions. It suggested that recognition was strengthened not only through clinical immersion but also through structured educational initiatives that elevated the visibility of radiologic achievements.

Similarly, Patel et al. (2023) investigated perceptions of professional status and concluded that both practical engagement and educational representation positively influenced students' recognition of the field. Their findings aligned with Choudhury and Ahmed's results, reinforcing the idea that recognition grew when students encountered the profession in diverse settings. Further reinforcing the necessity of experiential learning, Nguyen and Tran (2020) found that students who interacted with professionals in both clinical and academic settings demonstrated greater awareness of the field's contributions and societal value. However, a lack of this direct exposure contributed to the underestimation of professional responsibilities, underscoring the risks of invisibility. In a related study, Alhassan and Ofori (2021) found that students with clinical placements, mentorship, and exposure to professional achievements reported higher recognition awareness. Their study added weight to the argument that recognition was reinforced when academic discussions and media representation accompanied experiential learning.

Finally, Humphries et al. (2024) provided a comprehensive view, showing that students who participated in clinical rotations, observed inter-professional teamwork, and actively used educational media perceived the profession as more respected and valuable. This convergence of findings solidified the conclusion that both practical experience and thoughtful representation in media and academic resources shaped professional appreciation. Collectively, these studies strongly suggested that integrating recognition-focused content, mentorship, and structured experiential learning was essential for enhancing students' valuation and accurate perception of the radiologic technology profession.

Career Intention to Pursue Radiologic Technology

Understanding the factors that shape students' career intentions to pursue Radiologic Technology is essential to ensuring a sustainable and motivated healthcare imaging workforce. Recent research

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underscored that career intention was not merely a product of individual interest but a culmination of various educational, emotional, and contextual influences.

To begin with, Hizzett and Snaith (2022) emphasized that undergraduate radiography students' career intentions were strongly determined by their clinical learning experiences and exposure to professional role models. Their survey revealed that students who encountered supportive learning environments and inspiring mentors were more likely to develop clear post-graduation plans and maintain enthusiasm for radiologic practice. Complementing this, Kumsa et al. (2022) found that the quality of clinical placements played a decisive role in shaping students' long-term intentions. Specifically, consistent supervision and a positive learning climate increased students' desire to continue in the profession, whereas poor placement experiences and stress discouraged them from pursuing radiologic careers. Together, these studies highlighted that clinical learning environments acted as a critical determinant of career commitment.

Beyond clinical exposure, emotional well-being was also identified as a crucial factor in sustaining career commitment. For instance, Girn et al. (2021) highlighted how emotional challenges in clinical environments, such as anxiety and exposure to patient suffering, influenced students' perceptions of the field. However, their study also showed that adequate emotional support systems, such as mentorship and counseling, mitigated negative experiences and preserved motivation. This finding was echoed by Blackburn et al. (2021), who reported that, despite its disruptions, the COVID-19 pandemic reinforced many students' sense of professional purpose. Those who participated in pandemic response activities gained a stronger appreciation for the essential role of radiologic technologists, thereby deepening their professional identity and desire to remain in the field. Collectively, these studies demonstrated that emotional resilience and support systems were just as vital as technical training in sustaining career intentions.

In addition, pre-professional guidance significantly affected students' career intentions. Motsepe et al. (2024) demonstrated that effective high school career guidance contributed to students' accurate understanding of radiography as a career choice. Students who had early, informed exposure to the profession were more decisive in pursuing Radiologic Technology, while those who lacked guidance were more prone to uncertainty or attrition. This finding aligned with Alsharif et al. (2022), whose study of Saudi radiography students found that both intrinsic motivations, such as a desire to help others, and extrinsic motivations, such as job stability and salary, directly predicted students' decision to choose and remain in the field. Together, these studies suggested that fostering both emotional satisfaction and tangible professional rewards was essential in strengthening career commitment.

While most studies focused on radiography students, evidence from adjacent fields offered comparable insights. For example, a 2024 study published in the *IOSR Journal of Dental and Medical Sciences* explored medical students' interest in radiology and found that limited early exposure and misconceptions about technological roles reduced students' likelihood of pursuing imaging specialties. This aligned with trends observed in radiography education, where early and accurate exposure to professional practice encouraged stronger career intentions.

Thus, across disciplines, the evidence consistently pointed to the same conclusion: career commitment was cultivated through a blend of structured exposure, emotional support, and accurate professional guidance.

Impact of Learning and Media Exposure

Radiologic Technologists served as essential yet often overlooked frontline healthcare workers, transforming medical images into critical diagnostic insights. Despite their importance, awareness of this profession remained limited among Grade 12 students, particularly those preparing to choose their university majors. In many educational systems, including the Philippines, radiologic technology was rarely discussed in formal science classes such as biology or physics. Lee and Chen (2021), in a Taiwanese survey of 600 students, found that only a few had encountered RTs in classroom settings, while the majority first

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learned about the profession through television or social media. This gap underscored the urgent need to embed career education into existing curricula to ensure students received correct, classroom-based information. However, their study did not identify which student subgroups were most uninformed, nor did it assess the long-term impact of brief educational interventions.

The COVID-19 pandemic further reshaped how students engaged with education and career planning. As Mhlanga and Moloi (2020) noted, the rapid shift to digital platforms created new opportunities for remote career exposure but also widened inconsistencies for students with limited access to technology. In line with this, Goh and Sandars (2020) emphasized that future medical education, including radiologic training, might increasingly rely on digital simulations and virtual labs. While these innovations offered flexibility and broader access, they required robust infrastructure and teacher preparedness to be effective. Thus, while technology expanded opportunities for exposure, it also highlighted the importance of equitable access and institutional readiness.

Media exposure played a significant role in shaping students' perceptions of health careers. Patel et al. (2022) found that 60% of Canadian STEM-track seniors confused RTs with nurses or generic imaging technicians. After viewing short video clips featuring practicing RTs, 85% of the students corrected their misconceptions, demonstrating the power of well-crafted media to reshape career perceptions. However, because this study only measured short-term changes, it raised questions about whether media-driven interventions could sustain accurate perceptions over time.

Recognizing that media alone might not suffice, García-Rodríguez and Yamamoto (2023) integrated six “Radiography in STEM” modules into high school science classes. These 30-minute lessons combined imaging physics with interactive case studies and virtual lab hours, resulting in a 55% improvement in role perception and a 32% increase in interest in RT careers. Their findings built on Patel et al.’s results by showing that structured, curriculum-based interventions transformed short-term perception shifts into more lasting educational outcomes.

In the Philippines, del Rosario et al. (2022) localized these strategies through workshops led by RT students and guided tours of university imaging labs. Their research highlighted how technical demonstrations and career guidance improved student understanding, while also revealing that parental expectations and concerns about affordability strongly influenced career decisions. This finding is connected to broader motivational factors identified by Chao (2021), who found that personal interest, perceived job stability, family influence, and exposure to role models were key motivators in choosing healthcare professions. Santos et al. (2023) reinforced this by showing that students who understood RT studies and received encouragement from family and mentors were twice as likely to plan on enrolling in RT programs. Together, these studies demonstrated that while media and curriculum integration sparked awareness, sustained career intention was most effectively nurtured through a combination of family support, mentorship, and structured educational exposure.

Predictive Role of Knowledge and Stereotype

Students' decision to pursue a particular profession was influenced by multiple factors, including their knowledge of the profession, the stereotypes they encountered about it, their perceptions of the professional recognition of that occupation, and, ultimately, their career intentions toward that profession. In the context of allied health professions, and more specifically radiologic technology, the interplay among these variables became increasingly evident. These factors, in turn, influenced their career intentions. Understanding these dynamics was crucial because misconceptions and limited awareness of the profession affected students' willingness to pursue it as a career.

Research in medical and diagnostic radiology provided a clear example of how stereotypes influenced career interest. Grimm et al. (2021) found that medical students' stereotyped views of radiology, such as perceiving it as a "technology focused" field with "limited patient contact," contributed to reduced likelihood of choosing the specialty. Importantly, the study found that students with greater factual

knowledge of radiology were more likely to view the profession positively and consider it a career. This finding highlighted that both knowledge and stereotypes played a significant role in shaping career intentions and perceived fit within a profession.

Extending this idea to other health professions, Teresa-Morales et al. (2022) documented that stereotypical images of nursing among students and professionals were associated with lower perceived professional recognition and diminished career attractiveness. By analogy, negative or narrow stereotypes about allied health professions, including radiologic technology, reduced professional recognition and discouraged students from pursuing careers in these fields. Thus, both Grimm et al. and Teresa-Morales et al. demonstrated that stereotypes undermined career interest, while factual knowledge counterbalanced these effects.

Evidence from systematic and mixed-methods studies further supported the importance of knowledge and exposure. Tannous et al. (2024) found that greater curriculum exposure and a clearer understanding of professional roles increased students' perceived professional identity and willingness to commit to their chosen field. In other words, knowledge acted as a positive predictor of both perceivedrecognition and career intention. Taken together with earlier findings, this suggested that while stereotypes diminished interest, structured knowledge building interventions restored confidence and legitimacy in the profession.

The influence of media exposure and learning experiences on perceptions and career aspirations was also explored. Goodwin et al. (2025) conducted a systematic review examining how media exposure influenced individuals' career choices. Results indicated that media representations played a significant role in forming public perceptions of various professions. Positive portrayals enhanced interest, while negative or misleading depictions discouraged individuals from considering them. Since radiologic technologists were frequently depicted in the media as background or "invisible" healthcare professionals, this conclusion was particularly relevant. When combined with Tannous et al.'s findings, it became clear that both curriculum-based knowledge and media representation jointly shaped recognition and career interest.

Systematic reviews of readiness for practice also reinforced this pathway. Wynne et al. (2024) noted that students' understanding of role scope and real world responsibilities predicted both perceived professional recognition and future career commitment. Stronger discipline-specific knowledge fostered professional identity, which, in turn, influenced career intentions. Thus, Wynne et al.'s findings aligned with earlier studies by Grimm, Teresa-Morales, and Tannous, collectively reinforcing the conceptual pathway: knowledge and stereotypes predicted perceived recognition, which, in turn, affected career intention.

Studies specifically within radiography and radiologic technology further explored these points. Arif (2024) found that students with greater factual knowledge of imaging roles and emerging technologies, such as artificial intelligence, exhibited higher enthusiasm and a stronger intention to pursue the profession. It complemented Wynne et al.'s findings by showing that technical knowledge not only strengthened recognition but also directly boosted career interest in radiologic technology.

Similarly, Elshami et al. (2022) revealed that limited knowledge and persistent stereotypes significantly contributed to low career interest in radiology. The study found that radiology was commonly perceived as a profession with minimal patient interaction and a "behind-the-scenes" role, which negatively affected motivation. Importantly, structured career education programs effectively enhanced students' understanding, increased perceived professional value, and improved career interest. This reinforced the earlier conclusion that knowledge building interventions were essential to counteract stereotypes and elevate recognition.

In addition, Sousa et al. (2022) examined barriers in education and professional development among Belgian medical imaging technologists and nurses working in radiotherapy. They found that inconsistent educational pathways, unclear role definitions, and limited professional recognition hindered career progression and reduced motivation. On the other hand, clearer role expectations and consistent

training improved motivation and career commitment. When viewed alongside Elshami et al., this suggests that both student perceptions and professional realities are shaped by the same principle: clarity of knowledge and recognition foster stronger career intention.

In a related study, McLean et al. (2021) investigated allied health students' perceptions of their professional role. They found that uncertainty about role definition and limited visibility reduced confidence and career attractiveness. For instance, therapeutic and diagnostic radiography students reported that their public health role was rarely acknowledged during clinical placements, leading to diminished professional self-efficacy. However, professions with stronger identities and greater visibility attracted more students. This finding ties back to Goodwin et al.'s emphasis on media representation, showing that visibility, whether in clinical practice or public media, directly influenced recognition and career interest.

Synthesis

Student interest in Radiologic Technology is shaped by knowledge, exposure and field perceptions. Research from Alsharif et. al (2022) and Chandra et al. (2023), both stated that structured theoretical instruction and practical simulations are more effective than independent study and general knowledge. Furthermore, according to Arif et. al (2024) and Humprhies et al. (2024) integrating digital tools and AI resources strengthens knowledge acquisition, reduces apprehension and fosters professional adaptability.

Despite these benefits, Grimm et. al (2021) highlighted that stereotypes such as the perception of limited patient contact often weakens the fields appeal. According to Patel et. al (2023), Alhassan and Ofori (2023), these misconceptions can be mitigated through clinical placements, mentorship and professional recognition across diverse settings. In addition, Nguyen and Tran (2020) stated that a lack of direct interaction with professionals leads students to underestimate the field’s societal value and responsibilities.

And in the study of Girn et. al (2021) and Blackburn et. al (2021) beyond technical training, sustaining career commitment requires emotional resilience and a sense of purpose. This multifaceted development is critical to Grade 12 students at a career turning point. By addressing stereotypes through mentorship and meaningful exposure, this study guides students towards recognizing Radiologic Technology as a respected and valuable career path.

METHODS

Research Design

A descriptive-correlational quantitative research design was used in this study to examine and measure Grade 12 students' perceptions of Radiologic Technologists as healthcare frontliners. This design was appropriate because it allowed the researchers to statistically determine the levels of students' knowledge, stereotypes, perceived recognition, and career intention toward Radiologic Technology, and assess whether significant relationships existed among these variables without manipulating them.

A standardized survey questionnaire, adapted from validated instruments and previous related studies, was utilized to ensure reliability and consistency in measuring the constructs. This tool enabled the collection of numerical data to identify trends, patterns, and correlations in students' perceptions. While this approach does not establish causality, it was valuable for showing associations between variables such as whether students' learning and media exposure influence their knowledge and stereotypes, and whether these, in turn, predict perceived professional recognition and interest in pursuing Radiologic Technology as a career.

According to Creswell and Creswell (2021), a correlational design is suitable for studies that aim to describe and measure the degree of association between two or more variables using statistical techniques. In the context of this study, the correlational quantitative approach supported the goal of evaluating how various factors shape youth's perceptions of Radiologic Technologists and determining which demographic or exposure-related variables influence their views of the profession.

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Population and Sampling

The target population for this study consisted of all 362 Grade 12 STEM students enrolled at the University of Perpetual Help System DALTA – Calamba Campus. Using an online sample size calculator with a 95% confidence level and 5% margin of error, a representative sample of 187 students was selected. However, the actual number of respondents went beyond this and reached 222 students.

To select participants, the researchers used Stratified random sampling, in which students were grouped by academic strand (STEM, ABM, and HUMSS) and randomly selected from each group. This method ensured that all strands are proportionally represented, enhancing the generalizability of the findings while maintaining feasibility for data collection and analysis.

Respondents of the Study

The respondents of this study were Grade 12 students from the University of Perpetual Help System DALTA – Calamba Campus. A total of 222 students participated in the study, exceeding the required sample size of 187. These students were chosen from different academic strands, including STEM (7 sections), ABM (2 sections), and HUMSS (2 sections). Each section comprised approximately 17 students, ensuring balanced representation across different strands. They were selected to share their views and understanding about radiologic technologists. Their responses helped the researchers understand how young people view the roles and importance of these healthcare workers. The study focused only on Grade 12 students, as they are expected to have enough awareness and maturity to express their perceptions clearly. Their insights may also help them choose a college course, especially if they are considering a career in the medical or allied health fields.

Instrument of the Study

The study utilized a quantitative research instrument in the form of a standardized survey questionnaire to measure the perceptions of Grade 12 students toward Radiologic Technologists as healthcare frontliners. The instrument is structured to align with the study's objectives and capture the key variables identified in the Statement of the Problem.

The questionnaire was composed of five sections. The first section collected respondents' profiles, including sex, academic strand (STEM, ABM, HUMSS), and prior exposure to radiology settings. These demographic details provided the basis for determining whether significant differences in perceptions exist across groups defined by their profile variables. The second section measured students' levels of learning and media exposure related to Radiologic Technology and healthcare, focusing on the sources and extent of information they have encountered in school, on online platforms, and through other media outlets. The third section assessed the students' knowledge about the Radiologic Technology profession, including the nature of the work, roles, responsibilities, and contributions of Radiologic Technologists in hospital settings. The fourth section identified stereotypes and common perceptions associated with Radiologic Technologists, capturing both positive and negative assumptions that students may hold about the profession. This part examined whether RTs are perceived as essential frontliners or as less visible and undervalued healthcare workers. The fifth and final section evaluated students' perceived professional recognition of Radiologic Technologists and their career intention to pursue Radiologic Technology. It determined how students value the profession and whether they consider it a viable and respected career path.

The standardized questionnaire used a four-point Likert scale with the following response options: 4 – Strongly Agree, 3 – Agree, 2 – Disagree, and 1 – Strongly Disagree.

To ensure the instrument's validity and reliability, it underwent expert validation and pilot testing. Field specialists and research professionals conducted content validation to assess the clarity, accuracy, and relevance of the items. A pilot test was administered to a group of Grade 12 students not included in the actual study sample to assess the instrument's internal consistency using reliability analysis before its final administration.

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Data Gathering Procedures

The data for this study were gathered systematically in accordance with ethical standards and research protocols. Prior to data collection, the researcher sought approval from the School Director's Office. Once approval was granted, formal letters were issued to the principal of the Senior High Schools Department requesting permission to conduct the study among Grade 12 students. Coordination with class advisers was undertaken to schedule the distribution of questionnaires at a time that does not disrupt regular class activities.

A structured, standardized questionnaire served as the primary data gathering instrument. Depending on school policies and accessibility, the questionnaire was administered through online platforms, using Google Forms. Before participation, respondents received a brief explanation of the study's purpose and were asked to provide informed consent. Participation was voluntary, and all responses were kept strictly confidential. Respondents were given sufficient time to complete the questionnaire, after which the data were collected, organized, and prepared for statistical analysis.

Statistical Treatment of the Study

The following are the statistical treatments that were used in the study: *Frequency and Percentage Distribution.* It was used to determine the respondents' profiles in terms of age, academic strand, and prior exposure to radiology settings.

Mean. The formula was used to present students' perceptions of learning and media exposure, knowledge of the profession, stereotypes about Radiologic Technology, perceived professional recognition, and career intentions to pursue Radiologic Technology.

T-test and Analysis of Variance. These were used to test for significant differences in students' perceptions across groups defined by their profile variables.

Pearson Coefficient of Correlation. It was used to determine whether learning experiences and media exposure significantly influence students' knowledge and stereotypes about Radiologic Technology.

Regression Analysis. It was employed to determine whether students' knowledge and stereotypes significantly predict their perceived professional recognition and career intention toward the profession.

Ethical Considerations

In conducting this study, the researchers adhered to strict ethical guidelines to ensure the rights and well-being of all participants. Participation was entirely voluntary, and respondents were fully informed of the study's purpose, scope, and procedures before providing their consent. Confidentiality and anonymity were maintained by not collecting personal identifiers and by securely storing all data. The questionnaire was designed to be respectful and non-invasive, minimizing the risk of psychological discomfort or harm. Furthermore, permission to conduct the study was obtained from the school administration, and all procedures complied with institutional and national ethical standards governing research involving human subjects.

RESULTS AND DISCUSSION

Table 1. *Profile of the respondents in terms of sex*

Sex	Frequency	Percentage (%)
Male	98	44.1
Female	124	55.9
Total	**222**	**100.0**

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As shown in Table 1, the sex distribution of the 222 respondents is 98 males (44.1%) and 124 females (55.9%). This indicates that female respondents slightly outnumber male respondents, making up more than half of the sample. Such a distribution suggests that women were more represented in the study, which may influence the perspectives and findings, as gender can shape attitudes and experiences in education and healthcare contexts.

The higher proportion of female respondents reflects broader patterns in participation within academic and health-related fields. For instance, UNESCO (2023) reported that women continue to dominate enrollment in health sciences and education programs globally, which aligns with the observed female majority in this sample. Similarly, Lopez et al. (2023) emphasized that gender representation in Philippine education often shows women as more active participants in academic and community initiatives.

Table 2. *Profile of the respondents in terms of the strand*

Strand	Frequency	Percentage (%)
HUMSS	32	14.4
STEM	145	65.3
ABM	45	20.3
Total	**222**	**100.0**

As shown in Table 2, the distribution of respondents across academic strands. Of 222 students, the majority are enrolled in the STEM strand (145, or 65.3%). In contrast, fewer are enrolled in ABM (45, or 20.3%) and HUMSS (32, or 14.4%), indicating that STEM is the most dominant strand among respondents, accounting for nearly two-thirds of the population.

The strong preference for STEM reflects broader educational trends. According to Bautista and Bernardo (2020), Filipino students often choose STEM because it is perceived as aligned with future careers in medicine, engineering, and technology. Similarly, Caballero et al. (2021) noted that STEM programs are promoted in the Philippines to meet workforce demands in science and innovation, which explains the high enrollment rates. On the other hand, the HUMSS and ABM strands, while essential for developing communication, leadership, and business skills, attract fewer students than STEM. This imbalance mirrors findings by Reyes(2022), who observed that non-STEM strands often face challenges in visibility and perceived career stability.

Table 3. *Students' level of perception in terms of learning and media exposure*

Indicators	Mean	Interpretation
1. I often encounter information about Radiologic Technology on television, online platforms, or social media.	2.82	Agree
2. My school provides sufficient exposure to allied health professions, including Radiologic Technology.	3.29	Agree
3. I have learned about Radiologic Technology through educational campaigns.	2.90	Agree
4. I can easily access accurate and engaging media content about Radiologic Technologists' work.	3.07	Agree
5. The media portrays Radiologic Technologists as essential members of the healthcare team.	3.32	Agree
Composite Mean	**3.08**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree

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1.50–2.49 = Disagree
2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

Table 3 shows how students perceive their learning and media exposure about Radiologic Technology. The results show that students generally agree with all the statements, with a composite mean of 3.08, indicating that, overall, they feel they are sufficiently exposed to information about Radiologic Technology through various sources. They often encounter it on television and social media, believe their schools provide enough opportunities to learn about allied health professions, and acknowledge that educational campaigns contribute to their awareness. In addition, they find media content about Radiologic Technologists accessible and engaging, and they agree that the media portrays these professionals as essential members of the healthcare team.

This consistent agreement across all indicators suggests that students have a positive perception of Radiologic Technology. Their knowledge is shaped by multiple channels, such as school programs, campaigns, and media exposure, which together help them understand the importance of the profession. The fact that schools are seen as providing sufficient exposure highlights the role of education in guiding students toward health-related careers. At the same time, media portrayals reinforce Radiologic Technologists' professional identity, presenting them as vital contributors to patient care and the healthcare system.

These results show why it is so important to keep showing Radiologic Technology in a balanced and positive way. When students see positive aspects of a job, they are more likely to pursue it. Recent research supports this idea. As Umpar and Sison (2025) note in their study, the amount of exposure and training students receive has a strong effect on their attitudes and future skills in radiography. In other words, the better information they receive, the more confident and interested they become. Similarly, Culanggo (2023) emphasizes that professionals' identity is deeply shaped by their experiences of technological change and everyday medical practice. When students see that the job involves exciting new technology and hands-on patient care, they respect the job more. Ultimately, if schools, educational campaigns, and the media continue to work together to show Radiologic Technology in a positive light, the results will be highly beneficial. Students will not only understand the true value of the job but also see it as a highly respected and rewarding career choice for their future.

Table 4. *Students' level of perception in terms of knowledge of the profession*

Indicators	Mean	Interpretation
1. Radiologic Technologists are responsible for producing diagnostic images using advanced imaging equipment such as CT or MRI scanners.	3.53	Strongly Agree
2. I understand that this profession must interpret imaging requests based on clinical indications and patient history.	3.56	Strongly Agree
3. I know that RTs ensure radiation protection by adhering to safety protocols for both patients and healthcare staff.	3.53	Strongly Agree
4. I am aware that Radiologic Technologists collaborate with radiologists and other medical professionals in diagnosing and monitoring diseases.	3.52	Strongly Agree
5. I understand that continuous education and certification are required to maintain competence in Radiologic Technology.	3.59	Strongly Agree
Composite Mean	**3.55**	**Strongly Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree

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2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

Table 4 highlights how students perceive their knowledge of the profession of Radiologic Technologists. With a composite mean of 3.55, interpreted as "Strongly Agree," the results show that students have a clear and positive understanding of the responsibilities and importance of this profession in healthcare. According to Bárdyová et al. (2021), a robust medical curriculum is essential because it helps students connect classroom learning to the real-world skills needed to diagnose patients accurately.

Students strongly agree that continuous education and certification are necessary to maintain competence, with the highest mean score of 3.59. which shows they value lifelong learning and professional development, recognizing that healthcare is constantly evolving and that professionals must stay up to date with new technologies and practices to provide the best possible care (Umpar & Sison, 2025).

Students strongly agree that Radiologic Technologists are responsible for producing diagnostic images using advanced equipment such as CT and MRI scanners, reflecting awareness of the technical expertise required (Umpar & Sison, 2025). They also recognize that the profession involves interpreting imaging requests based on patient history and clinical indications, indicating that students do not see the job as merely pushing buttons; rather, they view it as a role that requires critical thinking and patient-centered decision-making (Vikestad et al., 2025).

Students strongly agree that Radiologic Technologists must follow strict radiation protection protocols, demonstrating their understanding of the ethical responsibility to protect both patients and healthcare staff from potential harm (Culanggo, 2023). Collaboration is also emphasized, although it received the lowest mean score of 3.52. Students agree that Radiologic Technologists work closely with radiologists and other medical professionals to diagnose and monitor diseases, highlighting that teamwork and communication skills are essential parts of the job, even if this area is perceived slightly less strongly than technical tasks (Vikestad et al., 2025)

Table 5. *Students' level of perception in terms of stereotypes of the profession*

Indicators	Mean	Interpretation
1. Most people assume that Radiologic Technologists only “press buttons” without analytical decision-making.	2.87	Agree
2. There is a present misconception that RTs work independently without contributing to the patient care team.	2.90	Agree
3. Some individuals think Radiologic Technology is a less demanding profession compared to nursing or medicine.	3.09	Agree
4. Society often overlooks the scientific knowledge RTs apply in image acquisition and interpretation.	3.18	Agree
5. Misconceptions about Radiologic Technologists discourage students from considering the profession seriously.	3.07	Agree
Composite Mean	**3.02**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree
2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

Table 5 presents students' perceptions of stereotypes about the profession of Radiologic Technologists. With a composite mean of 3.02, interpreted as "Agree," the findings indicate that students acknowledge the presence of misconceptions that continue to shape society's view of the profession. One

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stereotype student agreed with is the idea that Radiologic Technologists only "press buttons" without engaging in analytical decision-making (mean = 2.87), which reflects the fact that the intellectual and interpretive aspects of radiologic practice are often overlooked. Grimm et al. (2022) found that limited exposure to radiology among students can perpetuate such stereotypes, reducing recognition of the analytical skills required in imaging.

Another misconception is that Radiologic Technologists work independently and do not contribute to patient care teams (mean = 2.90). In reality, RTs are integral members of multidisciplinary healthcare teams, supporting accurate diagnoses and patient safety. Umpar and Sison (2025) emphasized that radiologic technology education prepares interns to perform tasks confidently and competently, particularly in patient care and collaboration. Students also agreed that some individuals view Radiologic Technology as less demanding compared to nursing or medicine (mean = 3.09). This stereotype undermines the rigorous training and continuous education required in the profession. As Grimm et al. (2022) noted, misconceptions about workload and responsibility can discourage students from considering radiology-related careers.

Society's tendency to overlook the scientific knowledge applied by RTs in image acquisition and interpretation (mean = 3.18) further illustrates how technical expertise is underestimated. Radiologic technologists must combine scientific knowledge with patient-centered care to ensure quality outcomes yet stereotypes often diminish this recognition (Umpar & Sison, 2025). Students also agreed that misconceptions discourage others from considering Radiologic Technology as a serious career option (mean = 3.08). This finding highlights how stereotypes not only affect public perception but also influence career choices, potentially limiting recruitment into the profession. Grimm et al. (2022) argue that addressing these misconceptions through education and exposure is essential to attract future professionals.

Table 6. *Students' level of perception in terms of professional recognition*

Indicators	Mean	Interpretation
1. Radiologic Technologists receive less public recognition than other allied health professionals despite their crucial diagnostic role.	3.33	Agree
2. Hospitals and clinics visibly acknowledge RTs' expertise during interprofessional healthcare collaborations.	3.36	Agree
3. Government or institutional programs should highlight the importance of RTs in early disease detection and treatment.	3.56	Strongly Agree
4. The media rarely features the professional identity and accomplishments of Radiologic Technologists.	3.42	Agree
5. Radiologic Technologists deserve higher visibility in public health discussions due to their impact on diagnostic accuracy.	3.59	Strongly Agree
Composite Mean	**3.45**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree
2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

As shown in the table, students' perceptions of radiologic technologists' professional recognition were generally positive. The majority of respondents recognize the important role that radiologic technologists play in the healthcare system, as indicated by a composite mean of 3.45, which is read as Agree. As stated by Alsharif et al. (2022), students often initially perceive Radiologic Technologists as less recognized but develop a stronger appreciation as their awareness of the profession increases.

Among the indicators, "Radiologic technologists deserve higher visibility in public health

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discussions due to their impact on diagnostic accuracy" had the highest mean of 3.59, indicating Strongly Agree, which implies that students understand the value of radiologic technologists in ensuring accurate medical diagnosis and believe they should be given more credit in discussions about healthcare. This perception aligns with the findings of Humphries et al. (2024), who found that students who are exposed to professional interactions and healthcare teamwork tend to perceive the radiologic technology profession as more valuable and respected. Similarly, Choudhury and Ahmed (2020) noted that recognition is strengthened when the profession is highlighted through institutional initiatives, professional programs, and public discussions.

On the other hand, the lowest mean of 3.33 (Agree) was recorded for the statement "Radiologic technologists receive less public recognition than other allied health professionals despite their crucial diagnostic role." Although still interpreted positively, this result suggests that students acknowledge the existing gap in public recognition of radiologic technologists compared to other healthcare professionals. The perceived professional status of radiologic technologists is often influenced by the level of educational representation and practical exposure students receive (Patel et al., 2023).

The results indicate that Grade 12 students are aware of the critical role that radiologic technologists play in healthcare. Still, they believe greater exposure and recognition are needed to emphasize their contributions further. Brennan (2020) and Alhassan and Ofori (2021) emphasized that experiential learning and professional engagement significantly enhance students' awareness and appreciation of the field.

Table 7. *Students' level of perception in terms of career intention to pursue RT*

Indicators	Mean	Interpretation
1. Understanding the technical and patient-care aspects of Radiologic Technology motivates me to consider it as a career.	3.06	Agree
2. I find the blend of medical science and technology in Radiologic Technology intellectually appealing.	3.17	Agree
3. I am interested in pursuing Radiologic Technology because of its potential for continuous professional growth.	2.59	Agree
4. Knowing the critical role of RTs in patient diagnosis encourages me to explore the field further.	2.92	Agree
5. If given the opportunity, I would pursue Radiologic Technology as my chosen profession.	2.63	Agree
Composite Mean	**2.88**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree
2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

Table 7 reveals that students typically have a positive tendency toward considering Radiologic Technology as a viable career option, with a composite mean of 2.88, interpreted as "Agree." Among the indicators, students concurred that the combination of medical science and technology in radiologic technology is intellectually interesting (mean = 3.17), suggesting that students' interest in the discipline is strongly influenced by its interdisciplinary nature. Hizzett and Snaith (2022) emphasized that exposure to professional roles and learning experiences within radiography significantly shapes students' enthusiasm and intention to pursue the field. Their interest and motivation to pursue radiologic careers increase if the students develop a clear understanding of the profession's technical and clinical responsibilities.

On the other hand, the lowest mean (2.59) was recorded in the indicator "I am interested in pursuing

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radiologic technology because of its potential for continuous professional growth". Although these findings are still rated "Agree," the lower score suggests that some students may still be unsure about fully committing to Radiologic Technology as their long-term career choice, even though they recognize the field's value and potential. They may be explained by the findings of Girn et al. (2021), who noted that students may experience emotional challenges and uncertainties during their training and clinical exposure, which can affect their confidence in their future career in the field.

The findings indicate that students generally have favorable perceptions toward pursuing Radiologic Technology, recognizing its scientific foundation, patient-care role, and professional significance in healthcare. In contrast, their confidence in long-term professional commitment may still require further reinforcement.

Table 8. *Factors influencing Grade 12 students' perception – Media*

Indicators	Mean	Interpretation
1. I have seen or heard about Radiologic Technology through media platforms.	3.20	Agree
2. Social media (e.g., TikTok, Facebook, YouTube) helped me learn about what RTs do.	3.14	Agree
3. I thought RTs were the same as nurses or generic hospital staff.	2.68	Agree
4. Watching videos or reading posts about RTs changed how I view the profession.	3.16	Agree
5. I believe videos and social media can help students understand the Radiologic Technology profession.	3.46	Agree
Composite Mean	**3.13**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree
2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

As illustrated, factors affecting Grade 12 students' perceptions of radiologic technology in relation to media exposure reveal a composite mean of 3.13, which is read as Agree, suggesting that media plays a meaningful role in shaping students' awareness and understanding of the radiologic technology profession, indicates that the students are not only exposed to information through media platforms but also rely on them as a source of initial knowledge about the field.

The statement "I believe videos and social media can help students understand the radiologic technology profession" had the highest mean of 3.46, indicating Agree, among the indicators, suggesting that students view social media and video content as useful resources for learning about the field.

In contrast, the statement "I thought RTs were the same as nurses or generic hospital staff" had the lowest mean (2.68), although it was still interpreted as Agree. It indicates that, despite the availability of media sources, some students initially hold misconceptions about the specific role of radiologic technologists, possibly due to incomplete or inaccurate media representation.

The results indicate that students' attitudes and awareness of radiologic technology are shaped by media exposure; this exposure may also lead to a partial understanding if the information presented is unclear or inaccurate. It supports the findings of Abdulrahman Alshariff et al. (2022), who stated that exposure to information sources and professional representation can enhance students' understanding and perception of the radiologic technology profession.

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Table 9. *Factors influencing Grade 12 students' perception – Learning Experiences*

Indicators	Mean	Interpretation
1. I have learned about Radiologic Technology in my science classes (e.g., Biology, Physics).	2.99	Agree
2. My school provided lessons, workshops, or modules related to Radiologic Technology.	2.94	Agree
3. Classroom activities helped me understand the role and responsibilities of Radiologic Technologists.	2.82	Agree
4. I would like to learn more about Radiologic Technology through school-based activities or virtual laboratories.	3.17	Agree
5. I think school lessons are better than social media in learning about Radiologic Technology.	3.20	Agree
Composite Mean	**3.03**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree
2.50–3.49 = Agree
3.50–4.00 = Strongly Agree

Table 9 presents the factors influencing Grade 12 students' perceptions of Radiologic Technology in terms of learning experiences. The table shows a composite mean of 3.03, interpreted as Agree, indicating that school-based learning experiences contribute to students' understanding of the profession.

The indicator "I think school lessons are better than social media in learning about RTs" obtained the highest mean of 3.21, interpreted as Agree, suggesting that students still view formal education as a reliable source of information about the profession.

Although still interpreted as Agree, the statement "Classroom activities helped me understand the role and responsibilities of RTs" received the lowest mean of 2.82, indicating that although classroom activities are beneficial, there may still be space to improve how the profession is introduced in learning environments.

The results show that school-based learning opportunities are crucial in helping students comprehend and view the field of radiologic technology. This finding supports the study of Luis and Hiroshima Yamamoto (2023), who found that integrating structured radiography-related lessons into high school science classes significantly improved students' understanding of the profession and increased their interest in pursuing careers in radiologic technology.

Table 10. *Predictive Role of Knowledge and Stereotype*

Indicators	Mean	Interpretation
1. I believe pursuing this profession will offer me greater prestige among my peers.	2.87	Agree
2. I feel I have sufficient knowledge about this profession's roles and responsibilities.	2.80	Agree
3. I often think about how society views professionals in this field.	3.02	Agree
4. I intend to pursue this profession after graduation.	2.45	**Disagree**
5. Stereotypical perceptions about this profession discourage me from choosing it.	2.56	Agree
Composite Mean	**2.74**	**Agree**

Legend:
1.00–1.49 = Strongly Disagree
1.50–2.49 = Disagree
2.50–3.49 = Agree

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3.50–4.00 = Strongly Agree

The table presents the predictive role of knowledge and stereotypes in shaping respondents' perceptions and intentions toward the profession of radiologic technology, as respondents generally agreed. Students in Grade 12 have a moderate awareness and perception of the profession and how societal views may influence their decision to pursue it, with a composite mean of 2.74, interpreted as Agree.

The statement "I often think about how society views professionals in this field" had the highest mean of 3.02, indicating agreement, among the indicators. It suggests that students are aware that their opinions, views, and attitudes towards the profession are influenced by societal perception.

However, the statement "I intend to pursue this profession after graduation" received the lowest mean of 2.45, which is still interpreted as Agree. It suggests that although students acknowledge the profession, other factors, such as personal interest or career opportunities, may still affect their intention to pursue it. The results imply that students have a general awareness of Radiologic Technology; however, their perceptions and career intentions may still be influenced by their level of knowledge and stereotypes about the profession. This finding supports the study by Omar Elshami et al. (2022), which found that limited knowledge and persistent stereotypes about radiology and imaging professions can reduce students' interest in pursuing the field. In contrast, improved understanding and career education can enhance students' perceptions and motivation toward the profession.

Table 11. *Significant differences in the students' perceptions when grouped according to their profile variables – Learning and Media Exposure*

Variable	Test Statistic	P-value	Decision	Interpretation
Students' perceptions when grouped according to sex	t = 0.425	0.671	Fail to Reject H_0	Not Significant
Students' perceptions when grouped according to strand	F = 8.741	< 0.001	Reject H_0	Significant

Tukey Post Hoc, HUMMS vs. ABM, e-sig = 0.012

Table 11 shows a notable difference in students' perceptions across profile variables. When grouped by sex, the t-test yielded a p-value of 0.425, leading to a decision to fail to reject the null hypothesis, indicating that there is no significant difference in how male and female students perceive Radiologic Technology in terms of learning and media exposure.

However, when grouped by academic strand, the F-test yielded a p-value of 0.000 (8.741), indicating rejection of the null hypothesis. The Tukey Post Hoc test further indicates a significant difference between HUMSS and ABM (p = 0.012), suggesting that students' academic strand influences their perception of Radiologic Technology in relation to learning experiences and media exposure.

The results imply that while sex does not significantly affect students' perception of the profession, differences in academic strand may influence how students receive and interpret information about Radiologic Technology. This finding supports the study by Hassan Tannous et al. (2024), which noted that students' curriculum exposure and understanding of professional roles significantly influence how they perceive a profession and their willingness to pursue it. Students from different strands may experience varying levels of exposure to science-related content, which can shape their awareness of health professions such as Radiologic Technology.

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Table 12. *Significant differences in the students' perceptions when grouped according to their profile variables – Knowledge of the Profession*

Variable	Test Statistic	P-value	Decision	Interpretation
Students' perceptions when grouped according to sex	t = 3.661	< 0.001	Reject H_0	Significant
Students' perceptions when grouped according to strand	F = 4.978	0.008	Reject H_0	Significant

Tukey Post Hoc, HUMMS vs. ABM, e-sig = 0.013/ STEM vs. ABM, e-sig = 0.020

Table 12 shows a notable difference in students' perceptions across profile variables. When grouped by sex, the t-test yielded a t-value of 3.661 and a p-value of 0.000, leading to rejection of the null hypothesis and indicating a significant difference in how male and female students perceive Radiologic Technology, particularly in their knowledge of the profession.

Similarly, when grouped by academic strand, the F-test yielded a p-value of 0.008 and a value of 4.978, leading to rejection of the null hypothesis. The Tukey Post Hoc test further shows that significant differences exist between HUMSS and ABM (p = 0.013) and STEM and ABM (p = 0.020).

These results suggest that students' background and academic exposure influence how much they know about the Radiologic Technology profession. Omar Elshami et al. (2022) reported that limited knowledge and misconceptions about the radiology and imaging profession can influence students' understanding and interest in the field.

Table 13. *Significant differences in the students' perceptions when grouped according to their profile variables – Stereotypes on Radiologic Technology*

Variable	Test Statistic	P-value	Decision	Interpretation
Students' perceptions when grouped according to sex	t = 0.041	0.967	Fail to Reject H_0	Not Significant
Students' perceptions when grouped according to strand	F = 4.563	0.011	Reject H_0	Significant

Tukey Post Hoc, STEM vs. ABM, e-sig = 0.008

Table 13 presents the significant differences in students' perceptions of stereotypes about Radiological Technology. For the sex variable, the t-test yielded a t-value of 0.041 and a p-value of 0.0967, leading to a decision not to reject the null hypothesis, which shows that there is no significant difference in the stereotypes held by male and female students. On the other hand, the strand variable showed an F-test value of 4.563 and a p-value of 0.011, both of which are significant. The Tukey Post Hoc test further indicates that the difference between students in the STEM and ABM strands is significant (e-sig = 0.008).

The lack of a significant sex difference suggests that stereotypes are held regardless of gender, often stemming from shared external influences. According to Grim et al. (2021), misconceptions, such as the belief that technologists perform only technical tasks without patient interaction, are attributed to limited direct clinical exposure rather than to personal demographics. However, the differences between strands highlight the role of academic background. Humphries et al. (2024) reinforced this by demonstrating that students who lack structured media exposure or a science-focused curriculum, such as those in ABM, are more likely to endorse common misconceptions. Furthermore, STEM students may have greater "educational representation," which Patel et al. (2023) noted reduces stereotypes and broadens understanding of the profession's diagnostic roles

Table 14. *Significant differences in the students' perceptions when grouped according to their profile variables – Professional Recognition*

Variable	Test Statistic	P-value	Decision	Interpretation
Students' perceptions when grouped according to sex	t = 1.976	0.049	Reject H_0	Significant

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Variable	Test Statistic	P-value	Decision	Interpretation
Students' perceptions when grouped according to strand	F = 3.066	0.049	Reject H_0	Significant

Tukey Post Hoc, STEM vs. ABM, e-sig = 0.05

Table 14 illustrates the significant differences in students' perceptions of professional recognition in the field. For the sex variable, the t-test value is 1.976 with a p-value of 0.049, showing a significant difference. Similarly, the strand variable yielded an F-test value of 3.066 and a p-value of 0.049, both of which are significant. The Tukey Post Hoc analysis confirms that the specific difference in perception lies between the STEM and ABM strands (e-sig = 0.05).

The results across both sexes and strands suggest that professional recognition is a variable perception influenced by both social and academic factors, according to Alsharif et al. (2022), who observed that students with prior exposure to professional workshops and institutional recognition, often more accessible in science-oriented strands like STEM, report a much higher awareness of the profession's contributions. Furthermore, Nguyen and Tran (2020) emphasized that a lack of direct exposure contributes to the underestimation of professional responsibilities. It explains why ABM students, who may have less interaction with clinical environments, perceive lower recognition for Radiologic Technologists than their STEM counterparts.

Table 15. *Significant differences in* the students' perceptions when grouped according to their profile variables – Career Intention to Pursue RT

Variable	Test Statistic	P-value	Decision	Interpretation
Students' perceptions when grouped according to sex	t = 0.218	0.828	Fail to Reject H_0	Not Significant
Students' perceptions when grouped according to strand	F = 10.338	< 0.001	Reject H_0	Significant

Tukey Post Hoc, HUMMS vs. STEM, e-sig = 0.040/ STEM vs. ABM, e-sig = 0.000

Table 15 shows a significant difference in students' perceptions across profile variables. When grouped by sex, the t-test yielded a p-value of 0.218. Since the p-value is well above the standard 0.05 threshold, the null hypothesis is not rejected, confirming that there is no statistically significant difference in perceptions between male and female students. Furthermore, both genders show a similar level of interest or neutrality toward the Radiologic profession. This finding is consistent with the study by Alsharif et al. (2022), which suggests that a student's decision to pursue medical imaging is driven by personal motivation and external opportunities rather than gender-specific roles.

In contrast, the academic strand proved to be a major factor. The F-test produced a value of 10.338 with a p-value of 0.000, leading to rejection of the null hypothesis and indicating a highly significant difference. To show where these differences lie, a Tukey Post Hoc test was conducted, revealing significant differences between HUMSS and STEM (p = 0.040) and between STEM and ABM (p = 0.000).

These results suggest that a student's academic background is a primary factor in shaping their viewpoint of the Radiologic Technology profession. The difference across strands aligns with the findings of Motsepe et al. (2024), who showed that effective high school career guidance and early exposure contribute to a correct understanding of radiography. STEM students who are naturally immersed in sciences such as physics and biology have a clearer perception of Radiologic Technologists than their peers in HUMSS or ABM. In contrast, the lack of a significant sex difference suggests that the profession is viewed with equal interest or neutrality by both genders, aligning with Alsharif et al. (2022), who showed that both intrinsic and extrinsic motivations, rather than gender-based roles, predict a student's decision to enter the medical imaging field.

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Table 16. *Significant influence of learning experiences and media exposure on students' knowledge and stereotypes about Radiologic Technology*

Variable	B	SEB	β	T - value	P-value
(Constant)	2.013	0.374		5.379	0.000
Learning experience	0.164	0.120	0.127	1.359	0.176
Media exposure	0.070	0.144	0.046	0.488	0.626

Model Summary

R	R^2	Adjusted R^2	F-value	P-value
0.159	0.025	0.014	2.232	0.110

***** Significant at **$p < 0.05$**.

Table 16 illustrates the influence of learning experiences and media exposure on students' knowledge and stereotypes about Radiologic Technology. Based on the regression analysis, since both values are greater than the 0.05 alpha level, the overall model (p = 0.110) is not significant. The model yielded an

R-value of 0.159 and an R2 of 0.025, showing that the independent variables explain only 2.5% of the variance in the students' knowledge and stereotypes. Individually, learning experiences had a p-value of 0.176, while media exposure had a p-value of 0.626. The table shows that, for the respondents in this study, neither learning experiences nor media exposure serves as a significant predictor of their professional knowledge or the stereotypes they hold.

The lack of influence reflects the specific nature of exposure needed to alter professional perceptions. According to Alsharif et al. and Chandra et al. (2023), professional knowledge is more enhanced when students benefit from structured theoretical and practical instruction, rather than independent or unguided study. Similarly, the non-significant impact of media exposure aligns with observations by Lee and Chen (2021) that radiologic technology is rarely discussed in formal curricula, leaving students to encounter the profession through unguided media or television, which may not provide a correct professional insight. Furthermore, Humphries et al. (2024) and Grimm et al. (2021) emphasized that structured media exposure, such as digital case studies and clinical shadowing, is necessary to counter misconceptions. According to Patel et al. (2023), if students' experiences and media consumption are unstructured or generic, they remain insufficient to reshape professional understanding or counter persistent stereotypes significantly. Table 16 illustrates the influence of learning experiences and media exposure on students' knowledge and stereotypes about Radiologic Technology.

Table 17. *Knowledge and Stereotypes about Radiologic Technology as Predictors of Perceived Professional Recognition*

Variable	B	SEB	β	T - value	P-value
(Constant)	3.325	0.116		28.568	0.000
Knowledge and Stereotype	0.043	0.041	0.078	1.034	0.302

Model Summary

R	R^2	Adjusted R^2	F-value	P-value
0.078	0.006	0.000	1.070	0.302

*Significant at p> 0.05

Table 17 presents the regression analysis results, indicating that knowledge and stereotypes about Radiologic Technology predict perceived professional recognition. The data reveals that the variable

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Knowledge and Stereotype yielded a coefficient of B = 0.043 with a p-value of 0.302, which is higher than the 0.05 level of significance. Furthermore, the Model Summary shows an R2 value of 0.006 and an overall model p-value of 0.302. As shown in the table, the knowledge and stereotypes are not significant predictors of professional recognition, accounting for less than 1% of the variance in how students perceive the status of the Radiologic Technology profession.

The lack of statistical significance suggests that simply having theoretical knowledge or general perceptions about the field does not necessarily translate into a higher sense of professional recognition among students. It aligns with the research of Alsharif et al. (2022) and Brennan (2022), who argued that professional recognition is not an inherent trait of the job but is instead cultivated through visibility, direct mentorship, and engagement within multidisciplinary teams. While students may have basic academic awareness, the results support the conclusions of Nguyen and Tran (2020), who discovered that a lack of direct clinical exposure contributes to the underestimation of the profession. Furthermore, this outcome reinforces the necessity for structured educational initiatives and professional workshops, as suggested by Choudhury and Ahmed (2020), to bridge the gap between classroom knowledge and the perceived societal value of the profession. The data imply that recognition is a complex construct that requires practical immersion, rather than just general knowledge, to be actualized by prospective students.

Summary of findings

1. The majority of the 222 respondents were female, accounting for 55.9% of the group, while males were made up of 44.1%. The distribution of the respondents across academic strands shows that the majority belonged to the STEM strand, with 65.3% of the total followed by ABM (20.3%) and HUMSS (14.4%). This shows a workforce-in-training that is primarily focused on science, tachnology and medicine. These demographics help explain why there is an elevated level of technical knowledge in the results, as most respondents are already immersed in a curriculum designed for future healthcare professions.
2. The study concludes that the Grade 12 students have positive perceptions of Radiologic Technology across various aspects. Students reported adequate exposure to the profession through media and school-based learning (M= 3.08, Agree). They demonstrated a high level of knowledge about the profession, with the composite mean of 3.55, particularly in terms of technical responsibilities and the need for continuous education. These findings imply that when students receive balanced and positive information through multiple channels, they develop a higher respect for the job and are more likely to view it as a rewarding career choice. However, while students have a firm grasp of the technical and ethnical responsibilities, such as radiation protection and advanced imaging, there is a slightly lower awareness of the collaborative professional side of the role.
3. The results show that Grade 12 students acknowledgement the presence of professional misconceptions toward Radiologic Technology (M = 3.02, Agree), particularly they only perform simple or mechanical tasks. Despite this, students showed a high level of student perception regarding professional recognition, (M = 3.45, Strongly Agree), acknowledging the importance of Radiologic Technologists in diagnostic imaging. On the other hand, the statement regarding RTs receiving less public recognition than other healthcare professionals. This shows that while students deeply value the profession's contribution, they are also aware of the existing gap in its societal status.
4. Grade 12 students view Radiologic Technology as a practical career option (M = 2.88, Agree) especially due to its connection to science and technology. However, while the technical aspects of the field are intellectually appealing, students may still have uncertainties about a long term commitment to the profession. These results suggest that a clear understanding of clinical responsibilities is vital for changing initial interest into a definitive career choice.

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5. The analysis reveals that the gender does not significantly influence students' perception across most variables. However, academic strand shows significant differences in learning and media exposure, knowledge, stereotypes, professional recognition and career intention. Furthermore, learning experiences and media exposure were not significant predictors of knowledge and stereotype ($p = 0.110$), while knowledge and stereotype did not significantly predict professional recognition ($p = 0.302$). This indicates that the general exposure alone is insufficient to shape deeper understanding and accurate perceptinof the profession.

CONCLUSIONS

Based on the summary findings, the following conclusions are derived:

1. The demographic profile of the respondents suggests that most students come from a science-oriented background, which contributed to their relatively high level of awareness and knowledge about Radiiologic Technology. However, differences in academic strand highlight the unequal distribution of exposure to healthcare-related information among students.
2. The study concludes that Grade 12 students possess a positive perception of Radiologic Technologists, particularly in terms of their knowledge, technical competence and importance in healthcare. Students understand the profession requirements and responsibilities associated with the field, indicating a strong cognitive awareness of the profession.
3. Although the study reveals that there are no significant differences in students' perceptions when grouped according to gender, still the academic strand significantly influences students' perceptions across all variables, indicating that students' educational background plays a major role in shaping their understanding of the profession.
4. The study concludes that learning experiences and media exposure do not significantly influence students' knowledge and stereotypes about Radiologic Technology. This suggests that general exposure alone is not sufficient to develop a deeper and more accurate understanding of the profession.
5. Students' knowledge and stereotypes do not significantly predict their perceived professional recognition and career intention toward Radiologic Technology. This implies that knowledge and misconceptions alone are not strong determinants of how students view the profession or their intention to pursue it, emphasizing the importance of more structured and direct exposure to the field.

Recommendations

Based on the findings and conclusions, the following recommendations are proposed to enhance students' awareness, understanding and perceptions of Radiologic Technology.

1. Integration of Healthcare Contexts into Non-STEM Curricula to expose all students to the medical field, ABM and HUMSS teachers should include healthcare examples in their lessons. For instance, ABM students could study the business side of a radiology clinic, while HUMSS students discuss patient care. This approach introduces careers like Radiologic Technology without changing the existing curriculum. It proves that students outside of science tracks can still pursue successful roles in healthcare.
2. Educational institutions should implement career orientation programs, seminars, and workshops featuring Radiologic Technologists to provide students with direct and accurate information about the profession.
3. Media platforms and educational campaigns should promote accurate and detailed representations of Radiologic Technologists to address misconceptions and improve public

awareness of their role in healthcare.

4. Hospitals and healthcare institutions may offer opportunities such as clinical exposure, field trips, or shadowing programs to help students gain firsthand experience and a deeper understanding of the profession.
5. Future researchers are encouraged to explore additional factors that may influence students' career intentions, such as socioeconomic background, parental influence, and personal interests, to further improve career guidance strategies.

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