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Health Hazards Exposure and Health Quality of Radiology Department Personnel in Negros Oriental: A Correlational Study

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Abstract

This study examined the health quality of radiology department personnel in Negros Oriental in relation to sociodemographic factors, radiation dose exposure, stress factors and work environment, and health hazard exposure. It was anchored on complementary perspectives emphasizing occupational radiation risk, health vulnerability, workplace demands and resources, and the biopsychosocial nature of health. Using a quantitative correlational design, the study was conducted in free-standing, public, and private healthcare facilities in Negros Oriental and involved 56 radiology department personnel, including Radiologic Technologists, X-ray Technologists, Radiologists, Receptionists, and other radiology staff. Data were gathered through a structured questionnaire, radiation badge monitoring, physical or medical examination records, and standardized tools such as the Maslach Burnout Inventory and Job Content Questionnaire. Descriptive statistics, Pearson's r, and Chi-square tests of independence were used in the analysis. Findings showed that most sociodemographic variables were not significantly associated with health quality, although smoking was significantly related to sick leave, while alcohol drinking was significantly related to both sick leave and number of absences. Annual cumulative radiation dose exposure was low, with a mean of 0.289 mSv, and was not significantly associated with years of operating radiation-producing machines or machine type. Overall stress factors and work environment were not significantly associated with sick leave, but selected workplace stressors, including lack of management support, traumatic experience, job insecurity, lack of proper resources, and discrimination, were significantly related to number of absences. Exposure to chickenpox, measles, and tuberculosis was significantly associated with sick leave, but not with number of absences. The study concluded that health quality among radiology personnel was influenced more by selected behavioral, psychosocial, and infectious hazard factors than by most demographic or equipment-related variables. It recommended continued health protection, consistent use of radiation protective equipment, strict workplace safety compliance, and improved human resource conditions in radiology departments. The study is aligned with SDG 3 (Good Health and Well-Being), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation and Infrastructure) because it addresses occupational health, safe working conditions, and responsible use of radiation-producing technologies in healthcare settings. Its sustainability impact lies in strengthening public health protection, institutional safety practices, and workplace conditions that support the continuity and quality of radiologic services.

Keywords: Absenteeism, Health Hazards, Health Quality, Radiology Department Personnel, Radiation Dose Exposure, Stress Factors, Work Environment

1. Introduction

Radiology department personnel work in settings where diagnostic efficiency and patient care are closely linked with occupational risk. Their work exposes them not only to ionizing radiation but also to communicable diseases, workplace stressors, and environmental conditions that may influence overall health quality. While radiologic services such as chest radiography remain indispensable in modern medicine, especially in the detection of pulmonary conditions, the occupational realities faced by radiology personnel require closer examination. Existing literature shows that radiation, blood borne pathogens, airborne infections, psychosocial stress, and workplace conditions all potentially affect health outcomes, yet these factors are often discussed separately rather than as interacting determinants of worker well-being. This study therefore investigates how sociodemographic factors, radiation dose exposure, stress factors, work environment, and health hazard exposure relate to the health quality of radiology department personnel in Negros Oriental.

Chest radiography (CXR) remains a major component of medical diagnostics, accounting for a substantial proportion of X-ray examinations and serving as an important screening tool for pulmonary tuberculosis among high-risk groups (RIT/ JATA Philippines, Inc., 2008; Burrill et al., 2007). At the same time, healthcare workers face elevated occupational risks compared with the general population, particularly in environments where safety protocols, equipment monitoring, and institutional risk management may be inadequate (Tarantola et al., 2006; Singh et al., 2017). Radiology personnel are especially vulnerable because they work at the intersection of radiation exposure, patient contact, and demanding clinical

routines. In addition to radiation-related threats, healthcare personnel remain at risk of blood borne and airborne infections. Occupational exposure may lead to infection from HIV, hepatitis B, and hepatitis C (David & Bell, 1997; Puro et al., 2005), while respiratory infections and tuberculosis-related exposure remain relevant concerns in healthcare settings in the Philippines (Ngeow et al., 2005; Auer et al., 2000). Radiation itself also presents long-term health concerns. Studies have linked CT-related radiation to projected future cancer burdens, and repeated exposure to ionizing radiation has been associated with DNA damage and carcinogenesis (Berrington de Gonzalez et al., 2007; Yamada, 2014; Choi et al., 2015). Despite this, the overall well-being of radiology personnel has not been comprehensively examined in a way that integrates occupational hazards, workplace conditions, and personal factors (Kruger et al., 2015).

The literature shows that healthcare work is inherently demanding and often associated with adverse working conditions, emotional strain, and absenteeism, all of which may affect health quality (de Paiva et al., 2020; Hulten et al, 2022). Within radiology, demographic and professional patterns vary across settings, but prior studies indicate the importance of organizational skills, quality assurance practices, and adherence to safety procedures in protecting radiology staff (Owen et al., 1995; Deitch et al., 1993; Hiller et al., 2023; Almodovar et al., 2018; Manalo et al, 2011). These findings suggest that occupational health in radiology is shaped not only by technical exposure but also by workplace systems and professional practice. Radiation exposure remains a major theme in the literature. Even low-dose, long-term exposure in diagnostic imaging is not considered risk-free, with studies linking CT radiation to increased cancer burden and emphasizing regular monitoring and compliance with exposure standards (Bushong, 2020; Brenner and Hall, 2007; de González et al., 2009; Feuardent et al., 2013; Singh et al. 2017; Johary et al., 2023). Another major theme is infectious hazard. Radiology personnel encounter patients and contaminated surfaces regularly, making infection prevention, aseptic technique, and safe practices essential (Ablin et al., 2021; David & Bell, 1997; Puro et al., 2005; Ngeow et al., 2005; Auer et al., 2000; Hall et al. in 2013). A third theme concerns psychosocial and behavioral factors. Stress, unclear organizational structures, lack of support, job insecurity, excessive workload, and shift work may undermine mental and physical health (Harris, 1989; Harris, 1991; Theorell, 1974; Cohen et al., 1993; Hulten et al. (2022); Dargahi et al., 2012; PubMed in 2023 and Sovold et al. in 2021). Musculoskeletal strain and socioeconomic disadvantage further complicate occupational health outcomes (Fernandes et al. in 2022; Adler et al. in 1994). In addition, smoking and alcohol consumption have been associated with absenteeism and poorer workplace health outcomes (Weng et al (2015); Buvik et al. (2018); McFarlin & Fals (2002).

Globally, radiology personnel operate within a healthcare environment where occupational exposure to radiation and infection remains a continuing public health concern. Evidence from India, France, Saudi Arabia, Canada, Switzerland, and other settings points to persistent gaps in compliance, monitoring, safety culture, and workplace support (Singh et al., 2017; Feuardent et al., 2013; Johary et al., 2023; Hall et al. in 2013; Fernandes et al. in 2022). These studies show that the issue is not isolated, but part of a broader global challenge involving healthcare worker protection. Nationally and locally, the Philippine setting adds urgency to the issue. Studies in Manila and Region IV-A indicate occupational vulnerability to respiratory infection, tuberculosis-related exposure, and radiologic workplace concerns, while work in Oriental Mindoro reflects the relevance of quality assurance and workplace context in radiologic practice (Auer et al., 2000; Ngeow et al., 2005; Almodovar et al., 2018; Manalo et al, 2011). In Negros Oriental, radiology personnel in hospitals and free-standing units operate within similar occupational realities, yet evidence specific to their health hazards exposure and health quality has remained limited. This makes the province an important local setting for examining how occupational risks translate into actual health-related outcomes.

The study is anchored on several complementary perspectives. The view that even low-level radiation exposure carries potential risk is reflected in the work of Gofman in 1970, which underscores the importance of minimizing occupational radiation exposure. The role of socio-economic inequality in shaping health quality is supported by Phelan and Bruce in 1995, suggesting that access to protection and health resources influences worker well-being. Rogers in 1975 contributes the idea that perceived vulnerability and severity of disease can motivate protective behavior among health workers. The study also draws from the job demands-resources model, which explains how high job demands can deplete worker resources while supportive conditions can buffer stress and promote well-being (Bakker and Demerouti in 2007). Maslow in 1943 provides a needs-based perspective, implying that safety and basic occupational protections are prerequisites for better overall functioning. Most centrally, the biopsychosocial model of Engel in 1977 frames health as the product of interacting biological, psychological, and social influences. Consistent with this perspective, the conceptual basis of the study positions sociodemographic factors, length of radiation exposure, stress factors and working environment, and health hazard exposure as key predictors of the health quality of radiology department personnel.

Although the literature extensively documents individual occupational hazards among healthcare workers, there has been no comprehensive attempt to systematically evaluate the overall well-being of radiology personnel by integrating multiple determinants in a single framework (Kruger et al., 2015). Existing studies discuss radiation safety, infectious exposure, workplace stress, socioeconomic influences, and health behaviors, but these are often treated as separate issues rather than interrelated factors affecting health quality. This gap is especially evident in the local setting. There is limited evidence focused specifically on radiology department personnel in Negros Oriental, despite their continuous exposure to radiation,

communicable disease risk, and workplace stressors. The rationale for the present study is therefore to determine how sociodemographic profile, radiation dose exposure, stress factors and work environment, and health hazard exposure are associated with health quality among radiology personnel. By doing so, the study seeks to generate evidence that can support administrative techniques, workplace safety policies, and practical interventions for radiology departments.

This study aligns most directly with SDG 3 – Good Health and Well-Being because it focuses on occupational health risks, disease exposure, workplace safety, and the health quality of healthcare personnel. By examining how radiation, communicable diseases, stress, and work conditions affect radiology staff, the study contributes to efforts to protect the health and well-being of essential healthcare workers. It also aligns with SDG 8 – Decent Work and Economic Growth because safe and supportive working conditions are fundamental to decent work, particularly in health service delivery. The discussion of job insecurity, workload, work environment, and organizational support directly relates to labor conditions and employee well-being. In addition, the study has relevance to SDG 9 – Industry, Innovation and Infrastructure through its concern with radiation-producing technologies, safety systems, equipment monitoring, and institutional compliance in healthcare facilities.

The study contributes to public health sustainability by generating evidence that can help reduce occupational disease risk and improve worker protection in radiology departments. It supports institutional sustainability because hospitals and diagnostic facilities depend on healthy personnel, effective safety protocols, and reliable administrative systems to sustain quality service delivery. It also contributes to policy and governance sustainability by providing findings that may guide workplace protocols, health protection measures, and administrative interventions for radiology personnel. Beyond health administration, the study has socio-economic sustainability implications because worker illness, absenteeism, and unsafe conditions affect organizational performance and service continuity. It also contributes to technological sustainability by emphasizing the responsible and safe use of radiation-producing machines within healthcare settings. Overall, the study is multidisciplinary because it bridges occupational health, public health, hospital administration, workplace psychology, and health systems management in addressing the well-being of radiology personnel.

Guided by the foregoing literature and framework, the study examines whether health quality among radiology department personnel is associated with sociodemographic profile, radiation dose exposure and length of exposure, stress factors and working environment, and health hazards exposure. Health quality is viewed in relation to annual health records and absences due to sickness, while hazard exposure includes radiation and communicable diseases. The study is therefore positioned as a correlational inquiry into the occupational determinants of health quality among radiology personnel in Negros Oriental, with the broader aim of informing safer and more responsive radiology workplace practices.

2. Materials and methods

2.1 Research Design

The study employed a quantitative correlational research design. It was used to assess the relationship between health quality and the independent variables, namely sociodemographic factors, radiation exposure, length of health hazard exposure, stress factors and workplace environment, and exposure to communicable diseases and radiation among radiology personnel in healthcare facilities in Negros Oriental.

2.2 Research Setting

The study was conducted among radiology department personnel in free-standing, public, and private healthcare facilities in Negros Oriental. The public facilities included district hospitals across the province, such as Bindoy District Hospital, Bais District Hospital, Bayawan District Hospital, Siaton District Hospital, and the provincial hospital located in Dumaguete City. The private hospitals were located in Dumaguete City and included Holy Child Hospital, Silliman University Medical Center, Negros Polymedic Hospital, and ACE Dumaguete Doctors Hospital. Free-standing radiology departments referred to diagnostic units not attached to hospitals.

2.3 Respondents

The respondents were personnel regularly working inside radiology departments in the identified facilities. These included Radiologic Technologists, X-ray Technologists, Radiologists, Receptionists, and other staff assigned within the radiology department. A list of radiology department personnel was obtained from the healthcare facilities. Based on this list, 60 radiology personnel were invited to participate in the study. Of these, 4 declined participations, resulting in 56 actual respondents.

2.4 Research Instruments

The study used a structured quantitative instrument designed to measure the major variables and test the research questions. Radiation exposure was assessed through personnel radiation badge monitoring, which provided an objective record of cumulative radiation dose, while physical or medical examinations supplied health-related information. The study also administered psychometric scales and inventories to quantify key variables. These instrument variables were drawn from

peer-reviewed journals and were checked for validity and reliability. The instrument description specifically identified the Maslach Burnout Inventory for standardized scores on emotional exhaustion, depersonalization, and lack of personal accomplishment, and the Job Content Questionnaire for measuring social support, psychological demands, and decision latitude. In addition, safety climate, job satisfaction, radiation protection knowledge, and health behaviors were measured quantitatively. The research questionnaire had five parts: socio-demographic data, radiation exposure, stress factors and work environment, health hazards exposures, and health status.

2.5 Data Collection

Data were gathered through personal administration of the questionnaire by the researcher in the radiology units after approval of the request letter by the management of each radiology department. Informed consent was secured before the survey was conducted. Each radiology department personnel was invited to answer the questionnaire in an assigned area and at a designated time, and the accomplished questionnaires were collected after the session.

2.6 Data Analysis

The survey data were analyzed using descriptive and correlational statistics. Descriptive statistics were used to summarize frequency and percentage distributions. Pearson's r and the Chi-square test of independence were used to analyze relationships among variables. The analysis was intended to determine the most influential occupational and organizational health hazard exposures affecting radiology personnel across healthcare facilities. The level of significance was set at 0.05 as the basis for accepting or rejecting the null hypotheses.

2.7 Ethical Considerations

The study obtained full consent from respondents prior to data collection. Responses were treated confidentially, and identities were kept anonymous during data processing and interpretation. Respondents were informed of their right to refuse to answer the survey and to withdraw from the study at any time without coercion. Names in the survey were optional and disregarded to protect privacy. The data were to be used only for the survey and for educational purposes, and all collected data were to be destroyed after processing and interpretation of the report.

3. Results and Discussion

3.1. Sociodemographic Characteristics and Health Quality

3.1.1 Sociodemographic Profile of the Respondents

The study involved 56 radiology department personnel. Nearly half belonged to the 20–29 age group, and the majority were male. Most had been in service for five years or less, and most were assigned in hospital-based radiology departments. In terms of health behaviors, 30.4% reported smoking, while about 69.6% reported alcohol consumption. These findings partly align with and partly differ from prior studies. The age pattern supports the observation that radiology personnel tend to belong to younger age groups, although earlier studies in the United States and Canada reported a greater proportion of female radiologists under 45 years old (Owen et al. (1995), Deitch et al. (1993), and Hiller et al. (2023)). The predominance of male respondents is more consistent with the Philippine study of Ablin et al. (2021), which also showed a higher proportion of males in radiology units. The shorter length of service found in this study contrasts with Ablin et al. (2021), where many radiographers had already practiced for 5–8 years.

3.1.2 Sex and Age in Relation to Health Quality

All respondents reported being physically fit to work based on annual physical examination records. Among those who had missed work, the reported reasons included fever, headache, surgery, and allergy. Statistical analysis showed no significant association between sex and sick leave ($x2 = 0.529$, $p = 0.467$), age and sick leave ($x2 = 1.854$, $p = 0.423$), sex and number of absences ($x2 = 2.679$, $p = 0.135$), and age and number of absences ($x2 = 3.302$, $p = 0.231$). Overall, sex and age did not significantly influence health quality in terms of either sick leave or number of absences. This finding does not support the statement of the Centers for Disease Control and Prevention (n.d.) that age and gender were associated with being absent from work. In this sample, health quality indicators measured through sick leave and absence frequency appeared not to vary by these demographic variables, suggesting that occupational health outcomes among the respondents were shaped by factors other than sex and age.

3.1.3 Length of Service and Employment Setting in Relation to Health Quality

There was no statistically significant association between length of service and sick leave ($x2 = 1.476$, $p = 0.478$), employment setting and sick leave ($x2 = 0.036$, $p = 0.849$), length of service and number of absences ($x2 = 1.629$, $p = 0.484$), or employment setting and number of absences ($x2 = 1.725$, $p = 0.189$). These results indicate that neither years of service nor whether the respondent worked in a hospital-based or free-standing unit was significantly related to health quality. The results suggest that longer employment in radiology and the type of work setting do not, by themselves, explain variation in sick leave occurrence or absence frequency among the respondents. In this study, health quality did not differ significantly across service duration or employment setting, indicating that occupational exposure may not operate in a simple cumulative way based solely on years worked or workplace type.

3.1.4 Smoking and Alcohol Consumption in Relation to Health Quality

Smoking showed a significant relationship with sick leave ($x2 = 3.578$, $p = 0.039$), while alcohol drinking also showed a significant relationship with sick leave ($x2=7.173$, $p=0.003$). For number of absences, alcohol drinking had a statistically significant association ($x2 = 4.606$, $p=0.021$), but smoking did not ($x2 = 1.816$, $p=0.114$). These findings indicate that smoking and alcohol use were relevant to health quality, although smoking was significant only for sick leave and not for number of absences. These findings align with prior literature. The result on smoking is consistent with Weng et al. (2015), who reported higher absenteeism among smokers than non-smokers. The result on alcohol drinking also supports the findings of McFarlin & Fals (2002) and Buvik et al. (2018), which linked alcohol consumption to workplace absenteeism. In this study, the evidence suggests that smoking and alcohol consumption negatively affected health quality, particularly through sick leave, while alcohol use also had a measurable effect on absence frequency.

3.2. Radiation Dose Exposure and Length of Radiation Exposure

3.2.1 Annual Cumulative Radiation Dose Exposure

The radiology personnel of Negros Oriental had annual cumulative radiation dose exposures of less than 1 mSv, with a mean of 0.289 mSv and a standard deviation of 0.266. This level was far below the occupational cut-off of 20 mSv. Among the 56 respondents, only one reported having been called for radiation investigation. The low exposure levels indicate that the respondents generally worked within safe occupational radiation limits. This is consistent with the view that radiology personnel are exposed to relatively low doses over long periods in diagnostic settings (Bushong, 2020; Bushong et al. (2013)). It also reflects the continuing importance of routine monitoring emphasized in studies on occupational radiation exposure such as Feuardent et al. (2013) and Johary et al. (2023), even when observed exposure remains well below the annual dose limit.

3.2.2 Years Operating Radiation-Producing Machines and Radiation Dose Exposure

Pearson's r analysis showed a very weak positive linear relationship between annual cumulative radiation dose exposure and years of experience operating or handling radiation-producing machines ($r = 0.166$, $p = 0.222$). The average years of operating radiation-producing equipment was about seven years, with substantial variation across respondents. However, the relationship was not statistically significant. This means there was no strong evidence that longer experience in operating radiation-producing machines was associated with higher radiation dose exposure. Although prolonged exposure is generally considered a concern in radiologic work, the findings in this sample suggest that years of operation alone did not predict radiation dose, possibly because exposure remained controlled across personnel. This interpretation remains consistent with the broader discussion on low-dose exposure risks in Bushong, 2020, Brenner and Hall (2007), de González et al. (2009), and Johary et al. (2023).

3.2.3 Type of Radiation-Producing Machine and Radiation Dose Exposure

The type of radiation-producing machine operated by the radiology personnel did not have a significant relationship with annual cumulative radiation dose exposure. No significant association was found for X-ray, fluoroscopy, computed tomography, magnetic resonance imaging, mammography, portable X-ray machines/C-arm, interventional radiography, or ultrasound. These findings indicate that radiation dose exposure did not significantly differ according to machine type among the respondents. The result suggests that exposure control measures may have been sufficiently uniform across machine categories in the study setting. Although previous literature has emphasized the risks associated with diagnostic radiation and the need for compliance and monitoring, the present data did not show machine-specific differences in annual cumulative exposure.

3.3. Stress Factors, Work Environment, and Health Quality

3.3.1 Stress Factors and Work Environment in Relation to Sick Leave

The analysis showed no significant association between overall stress factors and work environment and health quality in terms of sick leave ($x2 = 0.025$, $p=0.875$). The ratings suggested that radiology personnel in Negros Oriental generally experienced workplace stress rarely to never. This result contrasts with findings that stress-related organizational factors are linked to prolonged sick leave and adverse health outcomes among healthcare workers (Harris, 1989; Harris, 1991; Theorell, 1974; Cohen et al., 1993; Hulten et al. (2022)). It also differs from concerns raised in PubMed in 2023 and Sovold et al. in 2021 regarding the mental health effects of work disruptions. In this study, workplace stressors as a grouped measure did not appear to influence sick leave, suggesting a more limited effect on this particular dimension of health quality.

3.3.2 Specific Stressors and Number of Absences

Correlation analysis showed mixed patterns between specific stressors and number of absences. Very weak positive relationships were observed for bad management practices, long duty hours, workload, boring work, over supervision, lack of equipment, and limited promotional opportunities. Very weak negative relationships were found for lack of autonomy, inadequate working environment, lack of equipment, limited promotional opportunities, harassment, and discrimination.

Weak negative relationships were found for lack of support from management, job insecurity, and lack of proper resources. A moderate negative relationship was found for traumatic experience, while a strong positive relationship was observed for poor relationship with colleagues and bosses. However, only lack of support from management ($r = 0.285$, $p=0.033$), traumatic experience ($r = 0.318$, $p=0.017$), job insecurity ($r = 0.293$, $p=0.028$), lack of proper resources ($r = 0.270$, $p=0.044$), and discrimination ($r =0.036$, $p=0.019$) were described as having statistically significant negative linear relationships with health quality in terms of number of absences. These results indicate that selected psychosocial and organizational stressors were more relevant to absence frequency than to sick leave occurrence. The findings support parts of Dargahi et al. (2012) and Hulten et al. (2022), particularly the role of indistinct organization, poor job environment, unclear goals, and job insecurity in absenteeism and presenteeism. They also reflect the broader argument that stress-related psychological reactions can alter physiological functioning and increase vulnerability to illness (Harris, 1989; Harris, 1991; Theorell, 1974; Cohen et al., 1993). Overall, the results underscore the importance of management support, job stability, adequate resources, and a non-discriminatory work environment in maintaining employee health quality.

3.4. Health Hazard Exposures and Health Quality

3.4.1 Infectious Disease Exposure and Sick Leave

There was a statistically significant association between health quality in terms of sick leave and exposure to certain airborne diseases, specifically chickenpox ($x2 = 4.792$, $p=0.029$), measles ($x2 = 4.792$, $p=0.029$), and tuberculosis ($x2 = 4.378$, $p=0.036$). No significant association was found for influenza, mumps, or pertussis. These findings support the literature describing airborne disease as a significant occupational risk among healthcare workers. The results are consistent with Ngeow et al. (2005), who noted high rates of atypical respiratory infections among healthcare workers in Manila, and Auer et al. (2000), who highlighted the potential for exposure to airborne pathogens in contexts where X-rays are heavily used for tuberculosis diagnosis. The finding also reinforces Ablin et al. (2021), which emphasized infection risks in radiology departments and the need for safe practices.

3.4.2 Infectious Disease Exposure and Number of Absences

No significant association was found between number of absences and exposure to influenza, chickenpox, mumps, measles, pertussis, or tuberculosis, as all p-values were greater than 0.05. This indicates that while selected infectious disease exposures were associated with the occurrence of sick leave, they were not significantly associated with the frequency of absences. The result suggests that exposure to these health hazards may influence whether personnel incur sick leave at all, but not necessarily how often they are absent. This distinction is important in interpreting health quality, because different indicators of health behavior may respond differently to occupational exposure.

3.5. Synthesis of Major Findings

Overall, the study showed that most sociodemographic variables were not significantly associated with health quality, except for smoking and alcohol drinking in relation to sick leave and alcohol drinking in relation to number of absences. Radiation dose exposure was low and showed no significant relationship with years of operating radiation-producing machines or with machine type. Stress factors as an overall category were not significantly associated with sick leave, but selected workplace stressors were significantly related to number of absences. Finally, certain airborne disease exposures, particularly chickenpox, measles, and tuberculosis, were significantly associated with sick leave but not with number of absences.

4. Conclusion & Recommendations

The study concluded that health quality among radiology department personnel in Negros Oriental was generally not significantly associated with most sociodemographic factors, except for smoking and alcohol consumption, while radiation dose exposure remained low and was not significantly related to years of operating radiation-producing machines or machine type. It further found that selected workplace stressors, particularly lack of management support, traumatic experience, job insecurity, lack of proper resources, and discrimination, were associated with health quality in terms of number of absences, and that exposure to airborne diseases, specifically chickenpox, measles, and tuberculosis, had a significant relationship with health quality.

Based on these conclusions, the study recommended that radiology personnel should continue to prioritize and safeguard their health to avoid occupational-related diseases and should consistently use radiation protective apparel and equipment to reduce exposure. It also recommended that both healthcare facilities and radiology department staff maintain strict adherence to workplace safety measures to keep radiation dose exposure at a minimum and that workplace factors such as management relationships, traumatic experience, job insecurity, lack of support, and discrimination should be considered in improving the human resource environment.

The study was limited to health quality, health hazard exposures including radiation exposures and communicable diseases, sociodemographic factors, and health behaviors, and it involved only radiology personnel from hospitals and free-standing

units affiliated with the Radiology Departments of Negros Oriental. The study also recommended further research to explore other types of health hazards that may influence health quality.

Compliance with ethical standards

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