LUNG CENTER OF THE PHILIPPINES

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The Clinical Research Department (CRD) oversees all research projects at the Lung Center of the Philippines (LCP). It receives, evaluates and coordinates all research activities. It establishes policies and guidelines for the development, writing, presentation and approval of research proposals. Thru its Technical Review Board (TRB), it provides guidance and technical expertise on protocol development, including sample size calculation and statistical analysis plan. It spearheads institutional researches and coordinates with other national and international agencies for clinical trials, student undergraduate and graduate research, and collaborative research. It runs the TB Research Team at the LCP's National Center for Pulmonary Research (NCPR) as well as spearheads the Lung Cancer Registry to gather and collate the comprehensive local data on pulmonary tuberculosis and lung cancer, respectively. It maintains the Clinical Research Facility (CRF), an establishment that provides room, space and storage facilities for clinical trials and research.

The CRD publishes the Scientific Proceedings, the official journal of the LCP, to share local relevant educational material in the field of pulmonary medicine. The Scientific Proceedings Journal publishes original clinical investigations, epidemiological studies, case reports, review articles, evaluation of diagnostic and surgical techniques, and latest updates on management guidelines.

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The department likewise is aligned with the National Unified Health Research Agenda 2021–2025 on [1] responsive health system [2] research to enhance and extend healthy lives [3] holistic approaches to health and wellness [4] health resiliency [5] global competitiveness and innovation in health and [6] research in equity and health.

In order to achieve these proposed strategic directions, the CRD reviews its accomplishment using the perspectives of the Balanced Scorecard in [1] learning and growth [2] internal business processes [3] customer satisfaction and [4] financial perspective. From these perspectives, the CRD hopes to monitor the outcomes of all action plans and to evaluate the implementation of such plans.

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MAKE AN IMPACT: PUBLISH YOUR WORK!
(Yes... even if it is not an RCT!)

Jubert P. Benedicto, MD, FPCCP
Editor-in-Chief

When someone hears the words "scientific publication," certain thoughts automatically come up: randomized controlled trials or RCTs, rigorous study design, the presence of a good control group, adequate sample size, and other similar ideas. This may seem rational as we commonly perceive RCTs to be at the totem pole when it comes to "worthy" publications.

However, we need to expand our appreciation of published studies! We need to adopt an open mindset and be willing to learn from other forms of studies.

There is no doubt that there is a deluge of publications in the past decade that created significant impact both at the level of healthcare institutions in particular and the scientific community in general. These were practice-changing, had policy or administrative implications, or created some ripples among peers enough for them to be considered "best practice" and worthy of replication. In effect, these were impactful. These were able to fulfill the main intention of doing research: to create awareness on certain topics that are considered relevant by a target audience and to catalyze certain actions from such end-users. And these were not necessarily "scientific trials" in the strictest sense.

In this issue of the *Scientific Proceedings (SP)*, we will highlight such investigations. In addition, we would like to feature such works from the Lung Center's nursing staff. I always feel that this sector can produce much research output that needs to be published and shared to a national and even global audience. This issue is a testament that the SP is not limited to the medical community alone. This issue will prove that our nurses also churn out important works which can create palpable implications even in other fields.

I really want to convey a strong message that anyone from our institution should consider this journal as a very viable platform to highlight and publicize investigative and original works. You think your work displays a particular area of concern that should be shared, then let us publish it! You consider your work pertinent to your field of practice or interest, then let us publish it! This will ensure that it will reach the appropriate target users of your research even years from the time of its completion.

Do not be restricted to RCTs! We can learn relevant things beyond RCTs. Explore other potential natures of studies.

The *SP* also entertains investigations or initiatives which may be considered to belong to the following undertakings:

- Innovative work: this may involve programs, activities, or other initiatives that can be written up. Such undertakings may address or be focused on specific aspects of a disease entity or workflow. Its design may be original or considered creative, and its final evaluation or recommendation can be rich in terms of impact assessment and lessons. Program reviews, project impact assessments, and new product design or services may be considered under this umbrella term. They may precipitate other subsequent ideas that may be developed by end-users.

- Policy work: this may include implementation of certain administrative or hospital directives and their objective assessments. This may contain "lessons learned" during its actual policy implementation and possibly "best practice" that may be replicable in similar settings or institutions. Such works may potentially lead to potential changes or revisions of the policy by providing the rationale behind such recommendations.

- Narrative review: this summarizes findings from various studies tackling a particular subject in a scientific fashion. It is a critical and objective assessment of a topic. This is considered practical and flexible and will be of tremendous value in highlighting what may be currently known in a specific area or disease of interest.

These are just some examples of studies that create significant effects in the way we practice or manage certain services. Certainly, they provide valuable outputs and information. I will also dare to say that, in particular situations, and depending on the setting and end-user, they may be more practical, more easily understandable, and more useful compared to RCTs. Is this not one of the reasons why we do research in the first place?

We want our works to translate into something useful and implementable. This can be addressed by other forms of investigations. We just need to be creative, original, and have an out-of-the-box mind frame. **And of course, we need to publish!!!** It is one of the things anyone can do to share one's work and to create change (and possibly start a "legacy") in one's area of interest.

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ORIGINAL ARTICLE

THE PREVALENCE OF WORKPLACE BULLYING AMONG NURSES AT A TERTIARY LEVEL HOSPITAL

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ABSTRACT

Background. Workplace bullying is a critical yet underexplored issue that significantly affects job satisfaction, patient care, and organizational culture, particularly in specific institutions like the Lung Center of the Philippines (LCP). Despite widespread recognition of its harmful effects, reporting and addressing bullying remains challenging due to institutional and cultural barriers. This study investigates the prevalence and nature of workplace bullying among nurses at LCP, focusing on common forms of bullying, identifying the main perpetrators, and understanding the actions taken by nurses in response.

Objective. This study aims to determine the prevalence of workplace bullying among nurses at the Lung Center of the Philippines, focusing on three types: person-related, work-related, and physically intimidating bullying. It also seeks to identify the perpetrators and the actions taken by staff nurses in response to these incidents.

Methodology. A descriptive, cross-sectional design was used, using total enumeration sampling to gather data from all nurses at LCP. The study utilized the Negative Acts Questionnaire-Revised (NAQ-R) to measure experiences of person-related, work-related, and physically intimidating bullying. Additionally, the study will identify perpetrators and explore the actions of nurses who experience bullying.

Results. The study found that workplace bullying is prevalent among LCP nurses, with verbal outbursts and physical intimidation being common. Staff nurses and patient family members were frequently identified as perpetrators. Notably, 44.79% of respondents pointed to staff nurses as the primary source of bullying, followed by 39.88% citing patient family members. Coping mechanisms included prayer, used by 61.35% of respondents.

Conclusion. The research indicates notable workplace bullying among nurses at the Lung Center of the Philippines, characterized by person-related incidents such as practical jokes and ongoing criticism. These results emphasize the need for a more supportive and inclusive workplace culture prioritizing respect and professional integrity. Additionally, the demographic data reveals a workforce primarily composed of younger female nurses while acknowledging the significant representation of male and non-binary individuals, reflecting a growing diversity within the field.

Keywords. Workplace bullying, prevalence, perpetrators, actions taken

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INTRODUCTION

Bullying has been a subject of extensive global discussion.[1] Although bullying has been examined since the 1980s, there is no universally accepted definition for workplace bullying.[2] Nevertheless, Notelaers and Van der Heijden[3] discovered that approximately 90% of scholars concur that bullying entails repetitive and systematic adverse social conduct. This is an immensely significant issue as it harms nurses.[4,5,6] The majority of experts agree that bullying encompasses unwelcome, aggressive behavior characterized by a power imbalance and either repetition or the potential for repetition over time.[7]

Workplace bullying significantly impacts various aspects of nursing, including job satisfaction, patient care, and medical errors. This pervasive issue not only affects the mental health and physical well-being of individuals but also has detrimental effects on corporate and organizational culture, performance, morale, and productivity. These findings have been supported by the study of Yıldırım.[8]

Bullying in the healthcare sector continues to be a pressing global concern. However, the prevalence of under-reporting and the lack of effective interventions contribute to a culture of silence within institutions worldwide, leading to a scarcity of literature on the subject. In the field of nursing, workplace bullying, whether overt or covert, impacts individuals across all demographics, including age, gender, employment status, and religious affiliation. Additionally, the absence of organizational policies or legal frameworks against bullying creates a situation where victims are hesitant to address or report such behavior, leading to unjustified complaints. The reporting and resolution of issues by Filipinos are influenced by office politics and the hierarchy system, as noted by Belgira.9 The complexity of workplace dynamics hinders the study of this phenomenon. Even though there is limited research, workplace bullying remains a significant concern. The escalation of violence has prompted policymakers to develop bullying prevention measures that align with Filipino workplace norms.

A notable need exists for a specific protocol addressing workplace bullying at the LCP and other institutions in the country. Despite the well-documented prevalence and detrimental impacts of workplace bullying on the well-being of nurses and patient care, the lack of a dedicated protocol suggests a potential loophole in institutional regulations. This loophole may expose nurses to the risk of encountering or witnessing workplace bullying without defined procedures for reporting, resolving, or preventing such behavior. Considering the pivotal role of nurses in healthcare, the absence of these protocols underscores the pressing need to tackle this issue by formulating and enforcing comprehensive policies tailored to the distinct challenges in tertiary hospital environments. By establishing clear protocols for identifying, addressing, and preventing workplace bullying, hospitals can cultivate safer, more supportive work atmospheres that promote the health and professionalism of their nursing workforce.

This study aims to determine workplace bullying occurring among nurses at the LCP. More specifically, the study's objectives are to:

1. Determine the prevalence of workplace bullying among nurses in terms of
   1.1 person-related,
   1.2 work-related, and
   1.3 physically intimidating bullying
2. Identify the perpetrators of workplace bullying among nurses.
3. Determine the actions taken by the staff nurses who experienced workplace bullying.

In workplace bullying studies, self-reports are commonly utilized, but this approach can introduce common-method bias, response bias, and reporting bias.[10] These biases may lead participants to exhibit excessive consistency or positively present themselves rather than strive for objectivity. The correlation between childhood abuse and workplace bullying is evident, with forty percent of abused children becoming bullies later in life. This connection underscores early adverse events' potential additive or interactive impact on our study outcomes. As Johnson[11] discussed, stress proliferation delves into how past traumas can shape individuals' responses to subsequent stressors like workplace harassment. Moreover, the quantification of an individual's threshold to bullying remains elusive, and researchers face challenges in validating claims of bullying.

The phenomenon involves individuals' behavior and reactions. This research aims to assess the prevalence of bullying through self-reports from victims. The outcomes may influence the victim's biases, perceptions, emotions, social desirability, expectations, past encounters, and health conditions. As a result, this could lead to non-differential and differential misclassification and underestimation and overestimation of the incidence.[11]

Workplace Bullying

The issue of workplace bullying has been a prominent focus of academic research for the past 30 years. Global statistics highlight the widespread nature of workplace bullying, emphasizing its status as a worldwide concern.[12] American psychiatrist Caroll Brodsky, in his renowned book "The Harassed Worker," delved into the realm of workplace bullying, shedding light on the enduring torment faced by numerous individuals at the hands of their colleagues or superiors. Despite Brodsky's book, there needed to be more research and interest for more than ten years. The initial mention of workplace bullying can be attributed to a Norwegian study conducted in 1989.[13] During the 1980s, workplace bullying and non-sexual harassment started to become more prominent in Northern Europe and Australia.[14] Western nations have researched workplace bullying, while studies in Japan, South Korea, Mainland China, and

Hong Kong suggest that it manifests differently across various cultures. Research on this issue in Southeast Asia, particularly in the Philippines, has needed to be improved but is now gaining attention.[15]

According to Einarsen et al.[16] bullying is described as "repeated actions and behaviors directed towards one or more employees, which the victim does not desire, may be carried out consciously or unconsciously, but lead to humiliation, offense, and distress, and can disrupt job performance and create an unpleasant work atmosphere." According to Einarsen, Hoel, Zapf & Cooper,[14] workplace bullying involves harassing, offending, socially excluding, or negatively influencing someone's work. Bullying necessitates recurrent and regular (e.g., on a weekly basis) conduct, engagement, or progression over some time (e.g., approximately six months). The act of bullying intensifies and diminishes the well-being of the individual being targeted. The essence of bullying lies in the uneven power dynamics, making it hard for targets to fend off ongoing and intense mistreatment. Hence, a one-off confrontation or a clash between parties with equal "strength" does not qualify as bullying.[14] Thus, when bullying occurs, an unequal power dynamic indicates that the victim is left with minimal control or means of retaliation. Hoel and Salin, as cited by De Cieri et al.[17] suggest that understanding the demographic characteristics of workplace bullying victims can provide insight into an individual's formal or informal influence among colleagues.

The concept of bullying, as outlined by Matthiesen and Einarsen,[14] involves the experience of being neglected, hindered, or marginalized in terms of social connections. Organizational exclusion happens when an individual experiences being ignored or devalued because of the actions of others. Examples include being unjustly criticized for subpar job performance, doubting one's professional abilities, or mocked for one's efforts. There are instances when the victim's work is needlessly monitored. Failed attempts at humor and public humiliation led to the dissemination of cruel jokes and teasing.

Matthiesen & Einarsen discovered limited proof indicating that the personality traits of bullies directly influence their bullying behavior through an examination of 2200 Norwegian employees. Individuals who self-reported as bullies depicted themselves as having high levels of aggressiveness and low levels of self-esteem. This was particularly evident among a subgroup of offenders who also claimed to be victims of bullying. Zapf and Einarsen, as cited by Matthiesen & Einarsen, suggested three explanations for bullying: self-esteem protection, lack of social competencies, and micropolitical behavior. They found that the connection between bullying and a hostile work environment becomes evident when victims are contrasted with a control group. The control group consistently rated their workplaces higher than the targets regarding work environment quality, even before experiencing any form of bullying. Workplace bullying has been associated with various factors such as role conflicts and ambiguity, excessive workloads, organizational restructuring, management changes, detrimental management styles, organizational climate, and interpersonal conflicts.[14]

Aspects of Workplace Bullying Based on Negative Acts Questionnaire-Revised Tool

For this study, the Negative Acts Questionnaire-Revised (NAQ-R) developed by Professor Einarsen in 1994 was deemed the most appropriate tool. The author employed this questionnaire to evaluate individuals' exposure to workplace bullying. Ståle Einarsen, a Professor in Work and Organizational Psychology at the University of Bergen, Norway, and the Head of the Bergen Bullying Research Group, has dedicated the last 20 years to publishing a significant body of work on topics such as workplace bullying, leadership, and creativity and innovation within organizations. Acting as a member of the first interim board, he played a crucial role in establishing the International Association on Workplace Bullying and Harassment as one of its founding members.

The NAQ-R is an adaptation of the NAQ created by Einarsen & Raknes (1991, 1997) and Mikkelsen & Einarsen (2001), as mentioned in the study by Einarsen, Hoel, & Notelaers. It evaluates the mental and psychosomatic health of the respondent, the quality of the psychosomatic work environment, and leadership.[18]

According to Einarsen, Hoel, Zapf & Cooper, based on a random sample of 5,288 UK employees who completed a redesigned version of the NAQ-R and consistent with the most recent conceptualization of workplace bullying[16], three dimensions of workplace bullying (based on the NAQ-R instrument) were distinguished: work-related bullying, person-related bullying, and physically intimidating bullying.

Work-related bullying

Bullying behaviors within the workplace have a detrimental impact on the victims, making it increasingly difficult for them to perform their job duties effectively. These behaviors may involve removing specific responsibilities separate from actions primarily focused on the individual. This encompasses delegating unattainable tasks, assigning impossible deadlines, burdening individuals with unmanageable workloads, assigning meaningless tasks, and even providing incomplete information while posing a threat to security. Einarsen and colleagues as cited by Einarsen, Hoel, Zapf & Cooper16 emphasized that work-related bullying refers to the victim's job responsibilities and includes giving arbitrary deadlines or unmanageable workloads, excessive work monitoring, being assigned useless tasks, or even no assignments at all.

Person-related bullying

The act of bullying someone due to personal factors can be considered a stressor that can lead to detrimental health outcomes for the individual involved. Al- Jawazneh & Ali Smadi, as cited by Einarsen, Hoel, Zapf & Cooper[16]

Beswick, Gore, and Palferman, as cited by Einarsen, Hoel, Zapf & Cooper,[16] mentioned that person-related bullying includes yelling, intruding, violating one's privacy, spreading rumors or gossip, public humiliation, insulting, or even ignoring someone. Vartia, as cited by Einarsen, Hoel, Zapf & Cooper,[16] stated that slander, unpleasant hintings about someone's mental health, and social isolation might also be considered examples of person-related bullying.

Physically intimidating bullying

Physical intimidation through bullying encompasses aggressive and adverse behaviors that are more physical, such as criticism, shouting, or public embarrassment, along with physical aggression or threats of harm like finger-pointing, shoving, or obstructing the victim's movement. Einarsen et al., Erwandi, Kadir & Lestari, as cited by Ragay.[19] It is the physical component of bullying using behavioral terms.[19]

Workplace Bullying in the Philippine Setting

Bullying is a widespread concern in both childhood and adolescence, with evidence suggesting that it carries over into adulthood, notably within the workplace.[20] In the absence of a legal framework addressing workplace bullying, the Philippines has seen the rise of numerous studies and works of literature delving into this issue. Bullying is a common occurrence in diverse work environments. Literature on workplace bullying beyond the nursing profession was examined. Emotional and psychological harm is caused by bullying. Tolentino[21] conducted a phenomenological study to investigate the impact of bullying on the physical, psychological, and social well-being of twenty university teachers. The findings revealed that bullying was predominantly carried out by school authorities, colleagues, and students. Similarly, Armas et al.'s [22] study on workplace bullying in private companies in the fourth district of Nueva Ecija showed a correlation between senior staff bullying and employee burnout and job dissatisfaction. The survey conducted by Arcega and Caballero[20] aimed to examine the moderating effects of Psychological Capital (PsyCap) on workplace bullying and burnout within the Philippine National Police (PNP) uniformed personnel (N=447) in the National Capital Region (NCR). Most of the participants in this descriptive-correlational research were male, aged between 22 and 37 years, holding the rank of Police Officer 1 (PO1), and had served in the PNP for a duration ranging from one year and one month to five years. A significant percentage, precisely 37.8%, of uniformed personnel reported instances of bullying.

At the moment, it is evident that there is a noticeable absence of a particular protocol that deals with workplace bullying at the LCP and other tertiary hospitals within the country. Despite the acknowledged prevalence and negative consequences of workplace bullying on nurses' well-being and patient care outcomes, the absence of a dedicated protocol points to a potential gap in institutional policies and procedures. Due to this gap, nurses may be susceptible to encountering or witnessing workplace bullying, as there are no apparent means for reporting, resolving, or preventing such behavior. With the essential role nurses play in delivering healthcare, the absence of such protocols underscores the importance of promptly addressing this issue by developing and implementing tailored, comprehensive policies that cater to the unique challenges faced within tertiary hospital settings. Hospitals can create safer and more supportive work environments for their nursing staff by implementing precise protocols to recognize, address, and prevent workplace bullying. This will enhance the health and professionalism of the staff.

Incidence of Workplace Bullying Among Nurses

The literature on clinical and leadership domains extensively discusses nurse bullying.[23] In every care setting, nurse bullying is a distressing problem. The American Nurses Association defines nurse bullying as repeated and unwanted actions that aim to humiliate, offend, and cause distress to the recipient.

The findings of De Cieri et al.[17] suggest that women are more vulnerable to workplace bullying and have a diminished level of influence. Multiple studies conducted in Europe have consistently revealed that women are more likely to encounter bullying in their work settings than men. In another study by Jaradat et al.[24] Palestinian male nurses documented a higher incidence of workplace bullying in comparison to female nurses. The findings of bullying research corroborate this outcome. Local studies indicate that male nurses are subjected to the highest levels of both physical and non-physical violence.[24] The experience of workplace bullying has been reported among novice nurses who possess lower levels of formal power, as highlighted by various studies.[17] Jaradat et al.[24] found that younger nurses experience more workplace bullying. One study of Hutchinson et al. as cited by De Cieri[17] found that public hospitals experience higher workplace bullying. This observation holds utmost importance as the study is set to be conducted within a public tertiary hospital.

Fujishiro et al.[25] delved into workplace aggression's effects on Filipino nurses' work-related well-being in their study. A comprehensive analysis was conducted on the data collected from the 2007 Philippine Nurses Association national convention attendees in Cagayan de Oro. Participants from thirteen regions in the Philippines were employed in various nursing settings. Nine hundred ninety-seven individuals attended: registered nurses, educators, clinical practitioners, and administrators. However, only 690 participants submitted their completed questionnaires. The study found a correlation between workplace aggression, such as verbal abuse and physical assault, and the overall health and work-related health problems of nurses. Among the participants, 7.1% were victims of physical assault, and 34.1% faced verbal abuse; 8% reported having poor or fair health, with 30% to 40% indicating work-related health issues. The study reveals that nurses are more

frequently subjected to non-physical workplace bullying. It was observed that nurses experienced isolated incidents of assault from patients.

Furthermore, they faced continuous verbal abuse from patients, coworkers, supervisors, doctors, and visitors. Additionally, it was determined that patient engagement is prolonged by physical assault, whereas verbal maltreatment was found to have no connection. Nurses who provide direct patient care are more susceptible to physical assault rather than verbal abuse. On certain occasions, nurses may experience a sense of helplessness when dealing with patients. The importance of patient aggression outweighs that of institutional aggression. Varghese and colleagues26 found that verbal workplace violence was most pronounced among nurses from Southeast Asia and the Western Pacific. Bullying, mobbing, physical assault, and violence were moderately prevalent. Forty-one studies involving 42,222 nurses from 13 countries were reviewed and analyzed. The statistics show that workplace violence has led to 58% verbal assault, 64% physical assault, 23% threats, 30% physical assault, 21% sexual harassment, 12% bullying, and 25% mobbing. This issue affects patients, nurses, and organizations alike. Furthermore, workplace violence has detrimental effects on the well-being of nurses and necessitates the use of different management approaches.

In Zamboanga del Norte, Philippines, a study conducted by Bataga[27] revealed that a significant number of nurses who were bullied exhibited signs of demotivation, with some even contemplating leaving their profession. The study also identified various groups as the main perpetrators of bullying towards nurses, with clients accounting for 37%, managers and supervisors for 29%, doctors for 19%, peers for 11%, and supervisees for 4%. Experienced nurses are frequently the offenders, while novice nurses are the ones who suffer.[28] Additionally, Bataga highlighted that 80% of the nursing staff (83% being staff nurses and 17% holding managerial or supervisory roles) acknowledged the presence of workplace bullying in the hospitals where they are employed. The findings about nurses align with the prevailing trends in the field: The American Nurses Association (ANA) has documented that a significant percentage of nurses, ranging from 18% to 31%, have reported bullying by their colleagues. Furthermore, the NHS Staff Council's Health, Safety, and Wellbeing Partnership Group in 2022 has illustrated that 18.7% of staff members experienced bullying from their colleagues, while 12.4% encountered bullying from their managers. In contrast, the investigation by Alcantara et al.[29] demonstrated that the selected private hospitals in Cabanatuan City, Nueva Ecija, lacked workplace bullying. However, the analysis suggested that there is a possibility of moderate to high levels of factors that could result in workplace bullying. Notably, seniority and work promotion were highlighted as significant contributors to the elevated prevalence of bullying. Reviewing the related processes and policies is crucial to prevent potential job dissatisfaction.

Ragay S.[24] conducted a descriptive-correlational investigation on the correlation between workplace bullying and job satisfaction among hospital nurses in Negros Oriental, Philippines. The study involved 239 qualified participants from two private and four public hospitals. The results showed that the occurrence of bullying was not associated with the age, gender, or civil status of the nurses. In contrast, Bataga[27] discovered that nurses of any age or gender can experience bullying. These findings contradict the findings of Yildirim,[8] whose cross-sectional and descriptive study revealed a negative correlation between bullying and nurses' age ($P < 0.01$).

Perpetrators of Workplace Bullying

After analyzing two decades of existing studies, Samnani and Singh, as cited by De Cieri[17] acknowledged the requirement for further research to comprehend the individuals responsible for workplace bullying. However, a need for more empirical investigations has focused on workplace bullying perpetrated by different individuals. De Cieri et al.[17] classified healthcare bullies into four categories: downward, upward, horizontal, or inward bullies.

Actions Taken by the Targets of Bullying

Nursing bullying is widespread, distressing, perilous, and harmful to nurses' self-confidence (Silloriquez, 2019). Bullied nurses may end up neglecting patient care due to the physical and mental strain they experience. Studies indicate that utilizing coping mechanisms can help lessen the impact of workplace bullying caused by work-related stressors. Nevertheless, there is a scarcity of research on work stressors and coping strategies for dealing with bullying.[30]

Becker, Bailey, and Catanio[31] examined workplace bullying in a situation-based exercise. The activity found that the most used strategies were talking to co-workers (92.1%), family, and friends (88.5%), staying calm (79.8%), and avoiding the bully (76.4%)—all passive, indirect, and informal but deliberate and thoughtful. Interestingly, formal reporting (16.3%) and confrontation (7.8%) are the least effective methods of bullying management. Positive coping reduced workplace bullying in nurses. Problem-based coping reduced work mistakes and resignations.[32] Nurses tolerate workplace violence, which needs ongoing reform. After workplace bullying, neglect-based coping methods made people distrust the organization and nurses.[28]

Filipinos are known for their peaceful conflict resolution. They avoid conflict and avoid discussing issues. Belgira[9] suggests that Filipinos are conservative when discussing power, hierarchy, and bullying. According to Advincula et al. (n.d.), "office politics," the "whom you know" system, and silent tenure doctrines make bullying common and reporting difficult in the Philippines.[33] Filipinos are driven by social acceptance.[9] Authority value emphasizes blind obedience to a leader's goals. Filipino passivity reduces "raising issues

or questioning decisions".[9] These practices could lead to workplace bullying, especially among managers and staff.[33]

Theoretical Framework

Einarsen's workplace bullying and harassment theory underpins this study. Einarsen defines workplace bullying as constant hostile and aggressive, primarily psychological, resulting in insults, intimidation, or targeted punishment. It covers direct and indirect harassment, including work-related, person-related, and physically intimidating bullying.[18] Workplace harassment includes arbitrary deadlines, unmanageable workloads, excessive work supervision, unnecessary delegation of tasks, and failure to assign tasks, according to this theory. Empirical research shows that work-related behavior alone makes it challenging to determine harassment. Some workers who complain of being overworked or supervised don't see themselves as being bullied. Interpersonal bullying also involves personal insults, frequent teasing, relentless criticism, harmless teasing, and intimidation. Physical intimidation is a behavioral form of bullying.[16]

METHODOLOGY

Descriptive, cross-sectional research was used to determine workplace bullying among LCP nurses. Descriptive, cross-sectional studies describe phenomena or associations at a specific time. Participants answered the questionnaire using Qualtrics online survey.

Research Setting

The study will be conducted at a selected tertiary hospital in Quezon City, the Lung Center of the Philippines, which has a 236-bed capacity. Nursing services consist of general, critical, and Special Nursing Care Departments. CSNCD critical care nurses provide high-quality patient care with a 1:3 nurse-patient ratio.

Participants

The participants were currently employed at the Lung Center of the Philippines, including the chief nurse, nurse managers, nurse supervisors, head nurses, and staff nurses on contractual status, such as job orders, and permanent status, such as Nurse I and Nurse II. The Research Core Group members are excluded from the study. Participants may withdraw their participation to the study anytime if they: (1) No longer meet the inclusion criteria, (2) Too distressed or at risk for harm to continue with the participation, and (3) Feel excessive demands from the researchers and the study. In this study, respondents can withdraw from completing the survey at any time while still answering the questions. However, once they have submitted their responses, they will not have the option to withdraw their answers. This policy is in place because the survey will be answered anonymously to protect respondents' privacy and ensure the confidentiality of their responses.

Sampling

This study employed total enumeration, collecting data from every nurse at the LCP. A survey questionnaire using a QR code will be distributed to the entire population of nurses, covering aspects such as the prevalence of workplace bullying, types of bullying behaviors experienced, actions taken, and perpetrators. This approach will allow for a comprehensive understanding of workplace bullying among nurses at the institution, as data will be collected from every member of the population. The total population consisted of 306 individuals and is distributed as follows: 1 Deputy Director, 2 Department Managers, 116 Nurses, 1 staff, 74 Nurses, 2 staff, 17 Nurses, 3 staff, 1 Nurse, 4 staff, 5 staff, and 86 Job Orders (JO) staff. Total enumeration sampling was used since the population size with characteristics under the inclusion criteria is typically small.

Research Instrument

The instrument was categorized into three parts. Part I consists of the demographics, in which the participants will be described in terms of their age, gender, work status, current position, length of work experience, and area of work assignment. Part II of the tool is the Negative Acts Questionnaire-Revised (NAQ-R) by Einarsen et al.[18] which determines workplace bullying exposure. Part III consists of the identified perpetrators of bullying and the actions taken by the targets of bullying, which are appended at the end of this section.

The Negative Acts Questionnaire-Revised Tool (NAQ-R) is a reliable, valid, comprehensive, brief scale that could be used in various occupational settings. The reliability of this instrument was obtained from past research. Workplace bullying has high Cronbach's alpha coefficients (0.91–0.95) of the internal consistency reliability by NAQ-R.10 All the dependent variables are considered and measured using existing questionnaire instruments, each with a Cronbach's Alpha $\alpha > 0.95$, indicating good internal consistency. Some of the essential elements of this tool are: The NAQ-R assesses bullying exposure over the last six months, with response alternatives including (1) "Never," (2) "Now and then," (3) "Monthly," (4) "Weekly," and (5) "Daily."

The tool had undergone expert validation consisting of 3 experts. A pilot study was done on a small group that were not included int the total sample population gaining a 0.78 Crohn Bach alpha value which is acceptable.

Data Gathering

The researchers sent a written request to Dr. Norberto Francisco, the Chair of the Technical Review Board (TRB), for approval. After TRB approval, the researchers seek ethical approval from the Institutional Ethics Review Board (IERB), headed by Dr. Gladys L. Gillera. Then, researchers formally commence the data collection. The research tool was adapted for online administration using the Qualtrics

platform. The original tool, a questionnaire assessing workplace bullying among nurses, was modified to fit the electronic format while maintaining its original content and structure. This adaptation involved creating an electronic version of the questionnaire in Qualtrics, ensuring all questions and response options were accurately represented. The researchers conducted an orientation during the Nurses General Assembly, which explained the purpose of the study, the benefits, and risks, et cetera. After the general assembly, the QR code was presented during the unit meeting in every area. Nurses scanned the QR code using their smartphones or other devices. This is directed to the online survey, where they can respond. Non-respondents are deemed to have not provided their consent. The Qualtrics online form automatically generated responses. The data gathered from the test were carefully recorded in tables, analyzed, and interpreted accordingly.

Data Analysis

The study was summarized using descriptive statistics such as frequency and percentages. The researchers analyzed data points that needed to be added due to non-responses or incomplete entries using multiple imputation techniques to address these gaps and ensure the completeness and accuracy of the analysis. Additionally, the study used measures of central tendency (mean, median, and mode) and dispersion (standard deviation) to describe the extent of bullying experienced. The second objective involves identifying the perpetrators of workplace bullying among nurses. The researchers will solely confidentially identify perpetrators to prevent any further risks. Codes for each classification of bullying will be used, and any personal data will not be further identified. The researchers will calculate the frequency and percentage distribution of different types of perpetrators. Cross-tabulation will examine the relationship between the kind of bullying and the type of perpetrator, offering insights into patterns and associations within the data. For the third objective, the researchers will determine the actions of staff nurses who experienced workplace bullying. The researchers calculated the frequency and percentage distribution of various actions. Descriptive statistics will summarize these actions, providing central tendency and dispersion measures. If open-ended responses were collected, a qualitative thematic analysis would be conducted to identify common themes and patterns in the actions taken by nurses.

Ethical Consideration

This study was approved by the LCPIERB with code LCP-NU-010-2024. The participants were provided with a study explanation letter containing information about the study purpose, nature of participation, risks and benefits, data usage, and the investigators' contact information. To further protect the participants' identities, the researcher requested a waiver of documentation of informed consent.

RESULTS

Demographic Profile of Nurses at the Lung Center of the Philippines

This data presentation provides an overview of the demographic characteristics of the 324 nurses at the Lung Center of the Philippines, highlighting their age, gender, job positions, employment status, areas of assignment, and length of service.

Table 1. *Age Distribution of Nurses at the Lung Center of the Philippines*

AGE	FREQUENCY (N=324)	PERCENTAGE
20–30	125	38.58
31–40	140	43.21
41–50	37	11.42
51 and above	22	6.79
Withdrawn	0	0.00

Table 1 provides an overview of the age distribution of respondents. The largest group of respondents are aged 31–40 years (43.21%). This is followed by those in the 20–30 age range, representing 38.6% of the participants. Nurses aged 41–50 constitute 11.4% of the sample, while those aged 51 and above account for 6.8%. This distribution highlights that most respondents are in the younger to mid-career stages of their professional lives, with fewer representatives from the older age brackets.

Table 2. *Gender Distribution of Nurses at the Lung Center of the Philippines*

AGE	FREQUENCY (N=324)	PERCENTAGE
Male	95	29.32
Female	209	64.51
Non-Binary / Third Gender	8	2.47
Prefer not to say	9	2.78
Withdrawn	3	0.93

Table 2 shows the distribution of gender among the respondents, which reveals a female workforce, with women comprising 64.5% of the respondents. While men make up 29.3% of the sample, indicating a significant but smaller proportion compared to their female counterparts. Non-binary or third-gender individuals account for 2.5%, while 2.8% of respondents chose not to disclose their gender. The number of individuals who did not wish to continue (withdrawn) is minimal at 0.9%.

Table 3. *Current Staff Position Distribution of Nurses at the Lung Center of the Philippines*

CURRENT STAFF POSITION	FREQUENCY (N=324)	PERCENTAGE
Chief Nurse	0	0.00
Nurse Manager	0	0.00
Nurse Supervisor	7	2.16
Head Nurse	17	5.25
Nurse 2	90	27.78
Nurse 1	200	61.73
Withdrawn	10	3.09

Table 3 shows the distribution of the current staff positions of respondents who participated in the study. This reveals that the majority are in entry-level roles, with 61.7% holding the Nurse 1 position and 27.8% in Nurse 2 positions. A smaller proportion of the staff are in supervisory or managerial roles, with 5.2% serving as Head Nurses and 2.2% as Nurse Supervisors. Notably, no respondents are in the Chief Nurse or Nurse Manager positions. Additionally, 3.1% of the participants abstained from proceeding with the survey and withdrew from the study.

Table 4. *Employment Status Distribution of Nurses at the Lung Center of the Philippines*

EMPLOYMENT STATUS	FREQUENCY (N=324)	PERCENTAGE
Plantilla	214	66.05
Job Order	108	33.33
Withdrawn	2	0.62

Table 4 shows the employment status distribution among respondents. A significant majority, 66.0%, are employed under plantilla status, indicating a more permanent and stable employment arrangement. In contrast, 33.3% of the respondents are on job order status, which typically reflects a more temporary or contractual employment situation. A small fraction, 0.6%, chose to withdraw from the study.

Table 5. *Area of Assignment Distribution of Nurses at the Lung Center of the Philippines*

AREA OF ASSIGNMENT	FREQUENCY (N=324)	PERCENTAGE
Main ER / Triage	21	6.48
Radiology	0	0.00
OPD / Health and Fitness	4	1.23
Radiotherapy	0	0.00
PHDD	6	1.85
OR	14	4.32
Hyperbaric and Wound Care	2	0.62
St. Therese Unit	36	11.11
Ward 3A	32	9.88
Ward 3B	20	6.17
PACU / SICU	13	4.01
RICU	16	4.94
PICU	9	2.78
MICU / FOB	17	5.25
AMOU	7	2.16
APOU / Palliative Care	1	0.31
Hemodialysis	11	3.40
Ward 2A	20	6.17
Ward 2B	21	6.48
Ward 3C	25	7.72
Ward 3D	19	5.86
Ward 4A	20	6.17
Nursing Office	7	2.16
Hospitainer	2	0.62
Withdrawn	1	0.31

Table 5 shows data on areas of assignment among respondents. The most significant proportion of nurses, 11.1%, are assigned to the St. Therese Unit, followed by 9.9% in Ward 3A and 7.7% in Ward 3C. Other notable areas include Ward 2A and Ward 3B, each with 6%, and Main ER/ Triage and Ward 3B with 6.5%. Different areas have less than 5% of respondents, such as OPD / Health and Fitness with 1%, PHDD 2%, OR 4%, and Hyperbaric and Wound Care 0.6%. Several areas, such as radiology and radiotherapy, have no respondents.

Prevalence of Workplace bullying among Nurses

Only 316 of the 324 respondents continued participating in the study by answering the questionnaire, and eight withdrew from it.

Table 6. *Person-Related*

Person-Related (N=316)	Never	Now & Then	Monthly	Weekly	Daily	Total
1. Being humiliated or ridiculed in connection with your work.	213 (67.41%)	73 (23.10%)	12 (3.79%)	11 (3.48%)	7 (2.22%)	316 (100%)
2. Practical jokes carried out by people you do not go along with	218 (68.99%)	66 (20.89%)	17 (5.38%)	4 (1.26%)	11 (3.48%)	316 (100%)
3. Having allegations made against you	229 (72.47%)	69 (21.84%)	9 (2.85%)	4 (1.26%)	5 (1.58%)	316 (100%)
4. Being the subject of excessive teasing and sarcasm	239 (75.63%)	50 (15.82%)	13 (4.11%)	5 (1.58%)	9 (2.85%)	316 (99.99%)
5. Having key areas of responsibility removed or replaced	246 (77.85%)	49 (15.51%)	6 (1.90%)	12 (3.79%)	3 (0.95%)	316 (100%)
6. Spreading of gossip and rumors about you	195 (61.71%)	95 (30.06%)	12 (3.80%)	5 (1.58%)	9 (2.85%)	316 (100%)
7. Being ignored or excluded	231 (73.10%)	65 (20.57%)	8 (2.53%)	6 (1.90%)	6 (1.90%)	316 (100%)
8. Having insulting or offensive remarks made about your person	227 (71.84%)	63 (19.94%)	11 (3.48%)	10 (3.16%)	5 (1.58%)	316 (100%)
9. Hints or signals from others that you should quit your job	268 (84.81%)	31 (9.81%)	10 (3.16%)	3 (.0.95%)	4 (1.27%)	316 (100%)
10. Repeated reminders of your errors or mistakes	183 (57.91%)	95 (30.06%)	22 (6.96%)	8 (2.53%)	8 (2.53%)	316 (99.99%)
11. Being ignored or facing a hostile reaction when you approach	242 (76.58%)	51 (16.14%)	14 (4.43%)	4 (1.27%)	5 (1.58%)	316 (100%)
21. A persistent criticism of your errors or mistakes	226 (71.52%)	61 (19.30%)	13 (4.11)	11 (3.48%)	5 (1.58%)	316 (99.99%)

Workplace bullying among nurses, especially regarding person-related incidents, is considerable, with practical jokes perpetrated by coworkers occurring daily, resulting in a prevalence of 3.48%. Workplace bullying, defined by the regular modification or reassignment of critical responsibilities every week, has a prevalence rate of 3.79%. This behavior ranks as the second most common form of negative conduct encountered by nurses in the area. In addition, the adverse impact of workplace bullying, especially the persistent reminders of errors or mistakes, is identified as the third most prevalent behavior encountered by nurses monthly, representing 6.96%, and now and then comprising 30.06%. Furthermore, 84.81% of staff nurses do not receive indications or suggestions from others that they should resign from their positions.

Table 7. *Work-Related*

Person-Related (N=316)	Never	Now & Then	Monthly	Weekly	Daily	Total
1. Someone withholding information that affects your performance	249 (78.79%)	45 (14.24%)	14 (4.43%)	4 (1.27%)	4 (1.27%)	316 (100%)
2. Being ordered to do work below your level of competence	254 (80.38%)	46 (14.56%)	9 (2.85%)	2 (0.63%)	5 (1.58%)	316 (100%)
3. Having your opinions ignored	234 (74.05%)	59 (18.67%)	15 (4.75%)	2 0.63%)	6 (1.90%)	316 (100%)
4. Being given tasks with unreasonable deadlines	251 (79.43%)	47 (14.87%)	14 (4.43%)	1 (0.32%)	3 (0.95%)	316 (100%)
5. Excessive monitoring of your work	233 (73.73%)	50 (15.82%)	15 (4.75%)	7 (2.22%)	11 (3.48%)	316 (100%)
6. Pressure not to claim something to which by right you are entitled	229 (72.47%)	68 (21.52%)	12 (3.80%)	1 (0.32%)	6 (1.89%)	316 (100%)
7. Being exposed to unmanageable workload	220 (69.62%)	64 (20.25%)	17 (5.38%)	3 (0.95%)	12 (3.80%)	316 (100%)

Concerning work assignments, 80.38% of the nursing staff reported that they have yet to face orders to carry out responsibilities that are not commensurate with their level of competence. In addition, 21.52% of respondents report experiencing the negative pressure of being discouraged from claiming their entitlements occasionally. In addition, 2.22% of respondents stated that they were subjected to excessive monitoring of their work weekly, whereas 3.48% experienced this phenomenon daily.

Table 8. *Physically Intimidating Bullying*

Person-Related (N=316)	Never	Now & Then	Monthly	Weekly	Daily	Total
1. Being shouted at or being the target of spontaneous anger	254 (80.38%)	44 (13.92%)	9 (2.85%)	4 (1.27%)	5 (1.58%)	316 (100%)
2. Intimidating behaviors such as finger-pointing, invasion of personal space	276 (87.34%)	32 (10.13%)	5 (1.58%)	3 (0.95%)	0	316 (100%)
3. Threats of violence or physical abuse or actual abuse	300 (94.94%)	11 (3.48%)	4 (1.26%)	1 (0.32%)	0	316 (100%)

Experiencing verbal outbursts or being subjected to sudden displays of anger has emerged as the most common manifestation of physical intimidation in bullying, with 13.92% reporting such incidents occurring occasionally, 2.85% monthly, 1.27% weekly, and 1.58% daily. In contrast, 80.38% of individuals do not encounter these behaviors. Furthermore, most respondents, precisely 94.94%, indicated that they had not faced threats of violence, physical abuse, or actual abuse in their workplace.

Perpetrators of Workplace Bullying among Nurses

Among 324 respondents, 163 identified perpetrators of workplace bullying among nurses, 8 respondents withdrew from the study, and 153 did not answer the question. The latter group was considered not to have experienced bullying, as the questionnaire instructed those who had not been bullied to refrain from responding. Since respondents could select multiple perpetrators, the total number of responses may exceed the number of individuals.

Table 9. *Distribution of Perpetrators of Workplace Bullying among Nurses*

PERPETRATORS	FREQUENCY (N=163)	PERCENTAGE
Staff Nurse	73	44.79
Family members of the Patient	65	39.88
Doctor	41	25.15
Patient	47	28.83
Senior Nurse	46	28.22
Head Nurse	35	21.47
Nurse Supervisor	35	21.47
Nursing Attendant	21	12.88
Chief Nurse	3	1.84
Admin Staff	10	6.13
Others	13	7.97

Table 9 reveals that 44.79% of the respondents identified staff nurses as perpetrators of workplace bullying, making them the most frequently mentioned group. Close behind, 39.88% of respondents pointed to family members of patients as perpetrators of bullying. Patients themselves were identified by 28.83% of respondents, indicating that a third of the participants experienced bullying directly from those they cared for. Senior nurses were mentioned by 28.22% of the respondents, highlighting their role in the issue. Doctors were identified by 25.15% of respondents, reflecting their involvement in workplace bullying. Both head nurses and nurse supervisors were identified by 21.47% of respondents, showing that individuals in these leadership positions are also perceived as perpetrators. Nursing attendants were identified by 12.88% of the respondents, while administrative staff were mentioned by 6.13%. The chief nurse was identified by 1.84% of the respondents, making them the least frequently mentioned group. Additionally, 7.98% of respondents cited "others," which included resigned employees and specific individuals, further emphasizing the diversity of perpetrators from which workplace bullying can originate.

Actions Taken by the Nurses Who Experienced Workplace Bullying

Table 10. *Distribution of Actions Taken by the Staff Nurses who Experienced Workplace Bullying*

PERPETRATORS	FREQUENCY (N=163)	PERCENTAGE
Prayed	100	61.35
Laughed / Took the matter lightly	69	42.33
Voiced out negative feelings to friends, family, or significant others	86	52.76
Received support from friends, family, or significant others	68	41.71
Avoid Perpetrators	40	24.54
Suppressed emotions	35	21.47
Keep silent	81	49.69
Preferred to focus more on work	72	44.17
Endured being bullied	24	14.72
Acknowledged incidence of being bullied	14	8.59
Confronted Perpetrator	13	7.97
Requested to transfer to other areas	3	1.84
Opted not to go to work	7	4.29
Sought legal action or formal reporting	4	2.45
Stayed calm	91	55.83
Reported to authorities	6	3.68
Others	4	2.45

Table 10 reveals the actions taken by nurses who experienced workplace bullying. Most staff nurses, 61.35%, turned to prayer as their coping mechanism. Additionally, 55.83% focused on staying calm, suggesting a preference for maintaining composure in adversity. 52.76% also chose to express their negative emotions to friends, family, or significant others, seeking support from their networks. Meanwhile, some nurses (42.33%) opted to laugh or take the matter lightly.

DISCUSSION

Demographic Profile of Nurses

The demographic profile of the nurses at the Lung Center reflects broader trends observed in the nursing profession globally. The predominance of younger nurses, with the majority aged between 31–40 years, is consistent with findings from other studies highlighting the increasing number of early to mid-career professionals in healthcare settings. For instance, Jones and Gates[34] emphasized that younger nurses are often the backbone of hospital staffing. Still, they are also more likely to experience stress and job dissatisfaction, factors that can be exacerbated by workplace bullying.

The gender distribution, with most female nurses (64.5%), aligns with the global pattern of nursing being a female-dominated profession. However, the presence of male nurses (29.3%) and non-binary or third-gender individuals (2.5%) suggest a slight but essential trend toward greater diversity in the workforce. This diversity, while beneficial, can sometimes lead to gender-based bullying, as highlighted by Simons, Stark, and DeMarco,[35] who found that male nurses often experience different forms of workplace bullying compared to their female counterparts, including challenges to their competence and authority.

Prevalence of Workplace Bullying among Nurses

Person-Related

Workplace bullying among nurses, especially regarding person-related incidents, is considerable, with practical jokes perpetrated by coworkers occurring daily, resulting in a prevalence of 3.48%. Ensuring the workplace is a safe and inclusive environment is paramount. Engaging in pranks on colleagues under significant stress can result in workplace disputes and potential legal action.[36] While pranks may initially seem entertaining, they can quickly take a turn for the worse when someone is harmed. There are instances where pranks fail dramatically, often due to the prankster's innocent yet significant misjudgment. More severe failures arise when the prankster's intentions are misguided. In such cases, what is presented as a practical joke transforms into a malicious act of social aggression, bullying, harassment, or exclusion.[36] Workplace bullying, defined by the regular modification or reassignment of critical responsibilities on a weekly basis, has a prevalence rate of 3.79%. This behavior ranks as the second most common form of negative conduct encountered by nurses in the area. In addition, the adverse impact of workplace bullying, especially the persistent reminders of errors or mistakes, is identified as the third most prevalent behavior encountered by nurses being done monthly representing 6.96%, and now and then comprising 30.06%. This aligns with Vessey et al.[37] who found that constant criticism and reminders of errors are among the most damaging forms of workplace bullying, leading to significant psychological stress and reduced job satisfaction. Furthermore, 84.81% of staff nurses do not receive indications or suggestions from others that they should resign from their positions. Johnson and Rea[38] identified similar patterns in their study, noting that person-related bullying often manifests in subtle, persistent actions that undermine a nurse's confidence and professional identity.

Work-Related

Concerning work assignments, 80.38% of the nursing staff reported that they have yet to face orders to fulfill responsibilities that are not commensurate with their level of competence. In addition, 21.52% of respondents report experiencing the negative pressure of being discouraged from claiming their entitlements occasionally. In addition, 2.22% of respondents stated that they were subjected to excessive monitoring of their work weekly, whereas 3.48% experienced this phenomenon daily.

Findings from a recent survey by Raconteur, in collaboration with Attest, show that over 80% of workers feel they are under moderate to high surveillance by their employers.[39] When implementing workplace monitoring, organizations must carefully navigate the thin line between being supportive and inadvertently establishing a surveillance culture. Terez Rijkenberg, chief people officer at Socium10X, a consultancy specializing in business transformation, expresses this concern. She states, "Companies should be candid about their reasons for monitoring. By maintaining complete honesty, they can develop a culture of trust that can withstand the challenges associated with workplace monitoring."[39] Employees have a right to privacy in the workplace, which extends to remote work situations. "Excessive monitoring or a lack of respect for an employee's privacy can undermine trust, increase stress, and diminish productivity. Furthermore, there are instances where such actions may infringe upon an employee's legal and human rights."[39]

Monitoring employees may not only fail to boost productivity but can also diminish morale. Employees may come to believe that their employer does not trust them. This perception of needing to be more empowered and trusted can lead to a rise in turnover rates.[40]

Physically Intimidating Bullying

Workplace bullying encompasses actions or verbal statements that cause emotional distress, foster isolation, humiliate, or undermine an individual in a professional context. One or two individuals or entire groups can execute this behavior. It may be overtly visible or more nuanced, making it difficult to recognize. Bullying can involve various forms of abuse or violence, whether physical or verbal. It can occur through written communication, spoken words, text messages, social media, and emails, extending beyond direct personal interactions. [41]

Experiencing verbal outbursts or being subjected to sudden displays of anger has emerged as the most common manifestation of physical intimidation in bullying, with 13.92% reporting such incidents occurring occasionally,

2.85% monthly, 1.27% weekly, and 1.58% daily. In contrast, 80.38% of individuals do not encounter these behaviors. Furthermore, most respondents, precisely 94.94%, indicated that they had not faced threats of violence, physical abuse, or actual abuse in their workplace. This is comparable to findings by Laschinger et al.[42] who noted that physical intimidation, even when not frequent, can profoundly affect a nurse's sense of safety and well-being.

A multi-center cross-sectional study conducted in Malaysia involving junior doctors revealed that the prevalence of workplace bullying over six months was 13% among the participants. The study identified various forms of bullying, including work-related bullying, characterized by being assigned tasks below one's level of competence; person-related bullying involving humiliation or ridicule related to work; and physically intimidating bullying, which included experiences of being shouted at or subjected to outbursts of anger.[43]

Perpetrators of Bullying

The identification of staff nurses as the most frequent perpetrators of bullying (44.79%) is consistent with the concept of "horizontal violence" or peer-to-peer bullying, which has been well-documented in nursing literature. Griffin[44] explored this phenomenon extensively, noting that peer bullying often stems from stress, competition, and the hierarchical nature of nursing work environments. The involvement of patients and their families as perpetrators (39.88% and 28.83%, respectively) also highlights the unique challenges nurses face, which Roberts et al.[45] describe as the "dual burden" of providing care while managing aggressive behaviors from those they serve.

The role of senior nurses, doctors, and other healthcare professionals in bullying reflects the hierarchical bullying documented in studies like Hutchinson et al.[46] where power dynamics in healthcare settings often lead to bullying by those in authority positions. This can create a culture of fear and intimidation, further complicating the work environment for nurses.

Actions Taken by Nurses Who Experienced Workplace Bullying

Regarding coping mechanisms, the reliance on prayer (61.35%) and staying calm (55.83%) reflects cultural and individual strategies for managing stress. Giorgi et al.[47] found that spiritual and religious coping is common among healthcare workers in high-stress environments, particularly in countries with strong religious traditions. Seeking support from friends, family, or significant others (52.76%) aligns with the findings of Leiter et al.[48] who emphasize the importance of social support in mitigating the effects of workplace bullying.

The tendency of some nurses to laugh off or take bullying lightly (42.33%) could be seen as a defense mechanism, as Spector and Jex[49] suggest that humor can sometimes be used to reduce the perceived severity of a situation. However, while this might provide short-term relief, it does not address the underlying issues and could lead to the normalization of bullying behaviors.

CONCLUSION AND RECOMMENDATION

The study on the prevalence of workplace bullying among nurses at the Lung Center of the Philippines provided valuable insights into the demographic, employment status and professional profiles of 324 nurse respondents. The data revealed that most of the workforce is young, with a predominance of women (64.5%), and primarily in entry-level roles such as Nurse 1 (61.7%) and Nurse 2 (27.8%). Most nurses hold permanent plantilla positions (66.05%), while 33.33% are on job order status, reflecting the division between more stable and contractual employment types.

With these findings, workplace bullying among nurses at the Lung Center of the Philippines is a significant concern, especially among younger and less experienced nurses, contractual employees, and those working in high-stress units. The study showed that bullying is not only perpetrated by senior staff but also by peers, patients, and their families, indicating a complex issue that goes beyond hierarchical relationships. The study's findings aligned with global research that associates job insecurity, entry-level positions, and high-pressure environments with higher bullying risks.

The findings indicate that workplace bullying among nurses is a serious issue, with a significant prevalence of person-related incidents and work-related stressors. The high rate of practical jokes, excessive monitoring, and the reassignment of critical responsibilities demonstrate systemic problems that contribute to a hostile work environment.

Despite the prevalence of bullying, nurses primarily rely on personal coping strategies such as prayer, emotional support from loved ones, and humor. While these methods may provide temporary relief, they do not address the systemic nature of bullying in the workplace. The limited representation of management and supervisory roles in the survey sample further suggests that leadership may not be as involved in addressing these issues.

Given these findings, it is recommended that the institution implements comprehensive anti-bullying policies, offers regular training on respectful workplace behavior, and establishes clear channels for reporting and addressing bullying incidents. Additionally, fostering a culture of transparency, trust, and support within the organization will mitigate the negative impacts of bullying and improve overall job satisfaction and retention among nurses.

AUTHORSHIP

All authors have certified fulfillment of scientific proceedings authorship criteria.

DISCLOSURE OF CONFLICT OF INTEREST

All authors have declared that they have no conflicts of interest.

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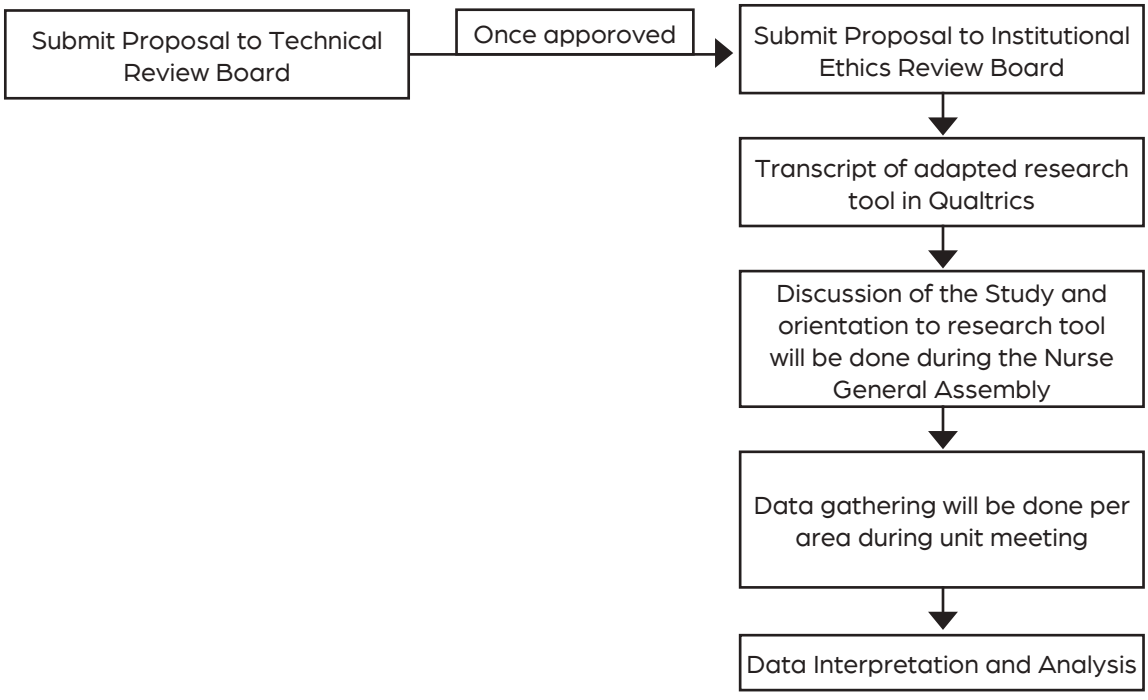
APPENDIX A

Figure 1. Data gathering procedure / flow chart



APPENDIX B

Study Explanation Letter
Lung Center of the Philippines

Quezon Avenue, Diliman,
Quezon City, 1100 Metro Manila

Department of Nursing Service

STUDY EXPLANATION LETTER (ENGLISH)

This study explanation letter is for nurses who are working at the Lung Center of the Philippines and who are invited to participate in our research study entitled, "The Prevalence of Workplace Bullying among Nurses at the Lung Center of the Philippines."

PART I: Information Sheet

Introduction
Good day! We are Janine Quizmundo and Kulsoom Mundoc, nurses from the Lung Center of the Philippines. We are conducting a study about the prevalence of workplace bullying among nurses at the Lung Center of the Philippines. We would like to invite you to be a part of this research. You do not have to decide today or right away whether you want to participate in this research or not, but we would appreciate it if you would let us know as soon as you are able and willing. If there is any question that you may want to ask, feel free to reach out and let us know.

Purpose of the Research
The study aims to identify the prevalence of workplace bullying among nurses in our institution. Part of the mission of the Lung Center of the Philippines is to provide quality health services. However, studies have shown that the presence of workplace bullying has numerous negative impacts that may reduce the quality of work of nurses and consequently may compromise quality of patient care.

Participant Selection
We are inviting all 306 nurses at the Lung Center of the Philippines to participate in this study. Inclusion criteria are as follows: a.) chief nurse b.) nurse managers c.) nurse supervisors d.) head nurses e.) staff nurses. Exclusion criteria will include the nurse researchers of this study.

Voluntary Participation
Your participation in this study is voluntary. As a participant, you are responsible to read the consent form carefully and to ask questions to the investigators about information that you do not understand. It is up to you to decide whether or not to take part in this study. We will not need to collect nor archive your personal information, based on National Ethical Guidelines for Health Research 2017 Guideline on Epidemiology #13: If the information is obtained by means of a questionnaire, and adequate information has been given to the research participant, there is no need for written informed consent, since answering the questionnaire implies consent.

Method of Data Collection
The investigators will conduct an orientation regarding workplace bullying during the Nurses General Assembly of the Lung Center of the Philippines. After that, you will be given a study explanation letter and a research instrument that we have encoded online into the Qualtrics Survey Solution application via scanning a QR code. Qualtrics online will generate the responses right away. The data collection will last for three months or until the target sample has been reached. However, please feel free to ask questions to the investigators before, during, and after answering the questionnaire. This web-based will take approximately 10 minutes to complete.

Benefits
There is no monetary compensation for your participation in this study. However, the results of the study have indirect benefits because it will provide baseline data about workplace bullying among nurses. Also, it will serve as a reference for future studies associated with the subject matter at hand. With this study, it may pave the way for the nurse administrators to develop a standard operating procedure and guidelines on how to address workplace bullying in the institution if the results are proven relevant. We want to create an environment where nurses in the institution can identify signs of workplace bullying in order to be properly addressed by the nursing management. We encourage nurses to be actively involved when it comes to voicing their concerns and to promote a healthy work environment that does not tolerate workplace bullying.

Risks
Participation in the study imposes minimal risks to you or put you in a vulnerable position because you will only be answering an online or written questionnaire. This study will not put you at any undue physical, social, psychological, legal, or economic risk. If you decide to leave during, or even after the study, tell the investigators right away and they will automatically discard the information that you have given them. They will not hold it against you and it will not affect your job in any way. Should you experience any psychological distress while answering the online or written questionnaire, you will be referred to a psychologist immediately.

Privacy and Confidentiality
All the information will be confidential. Rest assured that your name will not be affiliated with any of the findings in the study. If you agree to participate, you should know that you can withdraw at any moment throughout the duration of the study. There will be no penalty involved. Only the investigators and the research advisers will be given access to the data that will be collected. Moreover, answering the online questionnaire gives the investigators the choice not to have access to and not record your IP addresses, location data, and contact information to anonymize your response. The data that will be collected using the QualtricsXM Survey will expire and be deleted after five years. When presenting and publishing the final data, the investigators will not individualize your responses, instead, we will use group data to promote confidentiality. Furthermore, we requested from the Institutional Ethics Review Board a waiver of documentation of informed consent, whereby consent is given without your identifier or signature. All data will be numerically coded. The encoded data will be stored in a password-protected personal computer. Encoded data will be encrypted. Removable storage media such as flash memory drives will be kept in a locked file when not in use. The electronic data will be stored within five years, and it will also be overwritten and deleted after five years until the research has been defended and published.

Study Results and Contact Information
The researchers can present the findings at the request of the participants. The result of this study will be applied to be included in the research registry of the Lung Center of the Philippines and the Philippine Nurses Association (PNA). The study is approved by the LCP-IERB. If you have any inquiries considering your rights as a study participant, including grievances and complaints, you may call through the following information:

DR. GLADYS L. GILLERA
LCPIERB Chair
4th Flr. Room 4013, Lung Center of the Philippines
Quezon Avenue Extension,Quezon City
Email: lcpierb@gmail.com / Tel: 89246101 local 4047/4048

If you have any further questions regarding the study, please feel free to contact us through these phone numbers or email addresses:

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APPENDIX C

Study Questionnaire

Part I. Demographic Profile

Instructions: Please answer the following by selecting the box provided before your chosen answer or by supplying the necessary information as requested.

1.1 Age
- 20–30
- 31–40
- 41–50
- 51 and above

1.2 Gender
- Male
- Female
- Third sex/ non-binary
- Prefer not to say

1.3 Current Staff position
- Chief Nurse
- Nurse Manager
- Nurse Supervisor
- Head Nurse
- Nurse 2
- Nurse 1

1.4 Employment Status
- Plantilla
- Job Order

1.5 Area of Assignment
- Main ER/Triage
- Radiology
- OPD/ Health and Fitness
- Radiotherapy
- PHDD
- OR
- Hyperbaric and Wound care
- St. Therese Unit
- PACU-SICU
- RICU
- PICU
- MICU-FOB
- AMOU
- APOU/ Palliative Care
- Hemodialysis
- Ward 2A
- Ward 2B
- Ward 3A
- Ward 3B
- Ward 3C
- Ward 3D
- Hospitainer
- Nursing Office
- Ward 4A

1.6 Length of Service at current institution
- Less than 6 months
- 6 months to 11 months
- 1 year to 3 years
- 4 years to 7 years
- 8 years to 10 years
- more than 10 years

Part II. 2. Negative Acts Questionnaire-Revised (NAQ-R). (Adapted from Einersan, et. al, 2009)

Instructions: These statements describe your interactions with your coworkers. Please answer objectively and honestly. For each statement, please rate the frequency with which you experience the following interactions by selecting the appropriate number.

1	2	3	4	5
NEVER	NOW AND THEN	MONTHLY	WEEKLY	DAILY

PERSON-RELATED						
1	Being humiliated or ridiculed in connection with your work	1	2	3	4	5
2	Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks.	1	2	3	4	5
3	Spreading of gossip and rumors about you	1	2	3	4	5
4	Being ignored or excluded	1	2	3	4	5
5	Having insulting or offensive remarks made about your person, your attitudes, or your private life	1	2	3	4	5
6	Hints or signals from others that you should quit your job	1	2	3	4	5
7	Repeated reminders of your errors or mistakes	1	2	3	4	5
8	Being ignored or facing a hostile reaction when you approach	1	2	3	4	5

9	A persistent criticism of your errors or mistakes	1	2	3	4	5
10	Practical jokes carried out by people you do not get along with	1	2	3	4	5
11	Having allegations made against you	1	2	3	4	5
12	Being the subject of excessive teasing and sarcasm	1	2	3	4	5
WORK-RELATED						
13	Someone withholding information that affects your performance.	1	2	3	4	5
14	Being ordered to do work below your level of competence	1	2	3	4	5
15	Having your opinions ignored	1	2	3	4	5
16	Being given tasks with unreasonable deadlines	1	2	3	4	5
17	Excessive monitoring of your work	1	2	3	4	5
18	Pressure not to claim something to which by right you are entitled (e.g., sick leave, holiday)	1	2	3	4	5
19	Being exposed to an unmanageable workload	1	2	3	4	5
WORK-RELATED						
20	Being shouted at or being the target of spontaneous anger	1	2	3	4	5
21	Intimidating behaviors such as finger-pointing, invasion of personal space, shoving, blocking your way	1	2	3	4	5
22	Threats of violence or physical abuse or actual abuse	1	2	3	4	5

3. Identifying the Perpetrators of Workplace Bullying.

Instructions: Please answer the questions as objectively and honestly as you can.
If you experienced being bullied, please select which of the person/ persons did the bullying behavior to you. You may select more than one. If not bullied, please do not answer.

- Staff Nurse
- Family Member/s of the Patient
- Doctors
- Patient
- Senior Nurse
- Head Nurse
- Nurse Supervisor
- Nursing Attendant
- Chief Nurse
- Administrative Staff
- Others, please specify _____
  _____
  _____

4. What effects of workplace bullying have you experienced? Please select all that apply.

- Missed work/absenteeism
- Had health problems
- Experienced dissatisfaction
- Feeling stressed
- Failure to meet deadlines
- Feeling frustrated
- Suicidal Ideation
- Feeling angry or furious
- Feeling aggrieved
- Diminished work enthusiasm and excitement
- Desire to resign
- Develop distrust
- Failure to focus or lose concentration at work
- Failure to provide high-quality work
- Feeling isolated
- Have communication problems with other employees
- Others, please specify _____
  _____
  _____

5. What actions have you taken upon experiencing workplace bullying? Please select all that apply.

- Prayed
- Laughed/took the matter lightly
- Voiced out negative feelings to friends, family or significant others
- Received support from friends, family or significant others
- Avoid perpetrators
- Suppressed emotions
- Kept silent
- Reported to authorities (to whom: _____e.g., Head nurse, supervisor, et cetera)
- Preferred to focus more on work
- Endured being bullied
- Acknowledged incidence of being bullied
- Confronted perpetrator
- Requested to transfer to other areas
- Opted not to go to work
- Sought legal action or formal reporting
- Stayed calm
- Others, please specify _____
  _____

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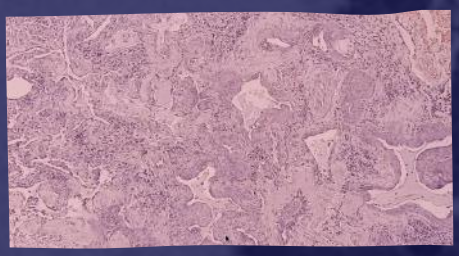

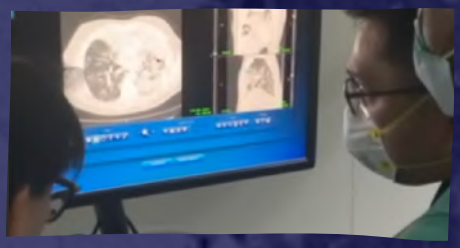

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LUNG CENTER OF THE PHILIPPINES
Scientific Proceedings

ORIGINAL ARTICLE

LEVEL OF KNOWLEDGE ON DIABETES MELLITUS AMONG NURSES AT THE LUNG CENTER OF THE PHILIPPINES

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ABSTRACT

Objective. This study assessed nurses' knowledge of diabetes, focusing on pathology, symptoms, blood glucose monitoring, medication management, and overall understanding. It also examined variations in knowledge based on socio-demographic factors, including age, gender, length of service, area of assignment, and educational attainment.

Methodology. A descriptive, cross-sectional survey of 160 nurses at the Lung Center of the Philippines utilized a 30-item modified Diabetes Basic Knowledge Test, categorizing knowledge as low, moderate, or high across four domains: pathology/symptoms, blood glucose monitoring, medication management, and overall knowledge.

Results. Nurses demonstrated moderate knowledge, with 78.1% (n=125) achieving an overall mean score of 57.47%. Among different demographic groups, female nurses scored slightly higher (58%) than male nurses (56%), and nurses aged 42–51 outperformed other age groups. Nurses in the Respiratory Intensive Care Unit and Hospitainer achieved the highest scores (62% and 65%, respectively). Nurses with 10–14 years of experience and those holding Master's or Doctorate degrees scored higher than their less-experienced counterparts.

Conclusions. Nurses demonstrated a moderate level of knowledge of diabetes mellitus based on demographic profiles and the modified DBKT, but their scores indicate insufficient understanding. Further research is needed to explore gaps between perceived and actual knowledge to validate and enhance these findings.

Keywords: Diabetes mellitus, diabetic basic knowledge test, nurse's knowledge, lung center

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INTRODUCTION

The global incidence of diabetes mellitus has been rising at an alarming rate. As of 2023, over 529 million people worldwide are living with diabetes, and projections estimate this number could more than double to 1.3 billion by 2050. This is driven primarily by type 2 diabetes, which accounts for around 96% of all cases.[1] Globally, the prevalence of diabetes is about 6.1%, with significant variation across regions. North Africa and Middle East currently have the highest rates of around 9.3% and this is expected to increase dramatically in the coming decades. By 2050, diabetes rates in some regions could reach as high as 16.8%, posing serious public health challenges.[2] As of recent data, the prevalence of diabetes mellitus in the Philippines is significant. In 2021, about 4.3 million Filipino adults were diagnosed with diabetes, with an additional 2.8 million cases undiagnosed. The prevalence among adults aged 20–79 stands at around 6.3%, meaning approximately 1 in 14 adults are living with the disease.[3] This number is projected to increase to 5.2 million by 2030 and 7.2 million by 2045, making it a growing public health concern.[3] The 2022 annual report of the Lung Center of the Philippines' (LCP) Medical Records, Registries and Library Division showed that the number of in-patients with diabetes increased from 530 to 1,020. Nurses play a pivotal role in the management and care of individuals with diabetes mellitus. Their involvement extends beyond basic clinical duties to comprehensive care that addresses both the medical and educational needs of patients. However, nurses also encounter challenges in the treatment of patients with diabetes mellitus attributed to complex medication regimens, dosing and timing errors, inadequate training on medications and devices, patient's non-adherence to monitoring and treatment regimens.[4] These issues can lead to suboptimal patient outcomes such as poor glycemic control, increased risk of complications and prolonged hospitalization. Therefore, it is vital to explore these challenges to contribute to the development of targeted interventions that can enhance the role of nurses in diabetes care, ultimately improving patient outcomes. Although there are initiatives, such as those by the Philippine Association of Diabetes Educators (PADE), which offer specialized training programs, participation remains limited due to financial constraints, logistical issues, and lack of institutional support. These issues contribute to a knowledge gap, particularly in the management of patients with complex diabetes needs. Moreover, while some nurses have access to CPD (continuing professional development) opportunities, many do not fully participate due to personal and professional barriers, including time constraints and insufficient hospital resources5. Given the increasing prevalence of diabetes and its associated burden on healthcare systems, this study is both timely and necessary. It is expected to provide valuable insights into how nursing practice can be optimized to support effective diabetes management, ultimately reducing the long-term complications and healthcare costs associated with the disease.

OBJECTIVE

The study aimed to examine LCP nurses' knowledge of diabetes and diabetes care. Specific objectives were to determine the level of nurses' knowledge of diabetes in terms of pathology/symptoms, blood glucose monitoring, medication, and overall knowledge; and to describe the level of nurses' knowledge across age groups, gender, length of service, area of assignment, and highest educational attainment.

METHODOLOGY

Study Design and Site

The study was a descriptive, quantitative research with a cross-sectional design. Nurses of the LCP answered a Diabetes Basic Knowledge Test (DBKT) which is a revised 30-item test on diabetes that mainly focuses on Diabetes pathology and symptoms, blood glucose monitoring, and Diabetes medication. The study used purposive sampling; the target participants were staff nurses from the Lung Center of the Philippines. The inclusion criteria are 1) staff nurses involving direct patient care, and 2) head nurses. The exclusion criteria are 1) and nurses assigned in the administrative area or support services, 2) Diabetes Nurse Educators, or those with formal diabetes education and training.

Study Population and Sample Size

The total sample size was determined based on the total number of staff nurses in the Nursing Services Department in 2023 which was 258. In determining the sample size for this study, Slovin's Formula was used, where n = N/(1+Ne2). The total sample size was determined to be 157.

Study Procedure

From November 1, 2023, to February 29, 2024, the researchers recruited participants after the meeting of each unit. Participants who agreed to participate were given the questionnaire, along with the study explanation letter. The questionnaire consisted of a 10-item section on demographics and a 30-item section on DBKT, totaling 40 items. The questionnaire took approximately 40–50 minutes to answer. Each questionnaire had a corresponding code, and participants received a different set of questionnaires, Set A and Set B, which contained the same content, but items were rearranged this was done to minimize response bias such as social desirability bias wherein respondent might provide answers, they believe are socially acceptable or desirable rather than their true beliefs or knowledge. This ensures validity and reliability wherein having different questionnaires allows the researchers to compare findings and check for consistency across various measures, enhancing the study's robustness.[6] Furthermore, adding a different set maintains the integrity and credibility of the participant's response. The examination was administered by an exam proctor who was not part of the research team. The researchers oriented and instructed two proctors in

administering and checking the examination. These proctors were not eligible to participate in the study. All examinations were conducted during the participant's scheduled monthly unit meetings. Once the participants were finished, the proctor collected the questionnaires and checked for any unanswered items that should be accomplished. All questionnaires were collected and checked by the exam proctor and endorsed to the study team.

Instrument

Initially, the Diabetes Basic Knowledge Test (DBKT)a 52-item multiple-choice questionnaire by Sally Gerard, which was in itself an update of Drass' DBKT, a 45-item questionnaire. This questionnaire was submitted to six experts in the field of diabetes education for review of content validity, item construction, and test format. A reliability coefficient, or Cronbach's alpha, of 0.79 was obtained.[2] In addition, she added seven new questions in the DBKT to assess the nurses' knowledge of more current issues in the field of diabetes that were not addressed in the previous version of DBKT.3 In the current study, the researchers modified the 52-item questionnaire DBKT of Sally Gerard and underwent initial content validation where the instrument was trimmed down to 30 items due to some questions on diet/nutrition which were not relevant in the Philippine setting. The tool was modified to fit the study's objectives which focused on diabetes pathology/symptoms, blood glucose monitoring, and medication. Some words were omitted, rephrased, and retained. Content validity was done by five experts consisting of an endocrinologist, a psychometrician, a head nurse, a Doctor in Nursing Management, and a PhD student in Nursing. The second round of content validation showed an overall agreement of 0.9, based on the Scale-Content Validity Index (S-CVI) Universal Agreement (UA). The Item-CVI (I-CVI) of the questionnaire was 0.90. Face validity was done by nine staff nurses in the ward that established the validity of the tool for use by the study. The length of time required to answer the modified questionnaire was approximately 17 minutes.

Table 1. *Scoring of the level of knowledge by Category*

OBJECTIVES	LEVEL OF KNOWLEDGE		
	LOW	MODERATE	HIGH
1.1 PATHOLOGY/SYMPTOMS 13 ITEMS (1,3,4,6,7,17,18,19,21,23,24,28)	0-4	5-9	10-13
1.2 BLOOD GLUCOSE MONITORING 5 ITEMS (8,9,10,11,30)	0-1	2-3	4-5
1.3 DM MEDICATION 12 ITEMS (2,5,12,13,14,15,16,22,25,26,27,29)	0-4	5-8	9-12
1.4 OVERALL LEVEL OF KNOWLEDGE	0-10	11-20	21-30

Table 1 shows how the researchers will describe the level of knowledge of the participants per category. Furthermore, the scoring will be based on the total correct answers garnered will be categorized. The mean scores will be categorized into 1) low level of knowledge with a mean score of 0 to 10; 2) moderate level of knowledge with a mean score of 11 to 20; and 3) high level of knowledge with a mean score of 21 to 30.

Statistical Analysis

Data was analyzed with Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics were presented as number, percentage, and mean ± standard deviation. Knowledge was categorized as "Low," "Moderate," or "High."

Ethical Considerations

This research was approved by the Institutional Ethics Review Board (IERB) of the Lung Center of the Philippines (LCP) under protocol number LCP-NU-022-2023. Participation in the study was entirely voluntary. Individuals who agreed to participate received a questionnaire accompanied by an explanatory letter. The letter outlined the study's purpose, provided details about the questionnaire, estimated the time required for completion, and explained how the collected data would be used. To ensure confidentiality, no personal identifying information was collected. The IERB approved a waiver for signed informed consent, allowing the return of completed questionnaires to serve as an indication of consent.

RESULTS

One hundred sixty staff nurses were recruited from November 2023 to February 2024. Most of the participants were female (72.5%) and 27.5% were male. The age range of participants was 22 to 61 years. Participants were assigned across various hospital units: 2A, 2B, 3A, 3B, 3C, 3D, 4A, Emergency Room, St. Therese Unit and Hospitainer; including the special areas: Hemodialysis Unit (HD), Medical Intensive Care Unit (MICU), Pediatric Intensive Care Unit (PICU), Respiratory Intensive Care Unit (RICU), and Surgical Intensive Care Unit (SICU).

Table 1. *Level of knowledge in terms of diabetes pathology/symptoms, blood glucose monitoring, and medications*

LEVEL OF KNOWLEDGE	LOW		MEDIUM		HIGH		MEAN SCORE	% MEAN PERCENTAGE SCORE
	N	%	N	%	N	%		
Pathology/Symptoms	7	4.1	122	71.8	31	18.2	7.81	60.08%
Blood Glucose Monitoring	15	8.8	107	62.9	38	22.4	2.79	55.8%
Medications	26	15.3	107	62.9	27	15.9	6.64	55.33%

Table 1 shows the level of knowledge of nurses about diabetes mellitus across three aspects: pathology/symptoms, blood glucose monitoring, and medications.

For Pathology/Symptoms, only 4.1% of nurses have low knowledge, with most nurses (71.8%) falling in the moderate-knowledge category, and 18.2% with high knowledge. The mean score for this aspect was 7.81, corresponding to 60.08% of correct answers.

For Blood Glucose Monitoring, a slightly higher percentage of nurses (8.8%) have low knowledge compared to Pathology/Symptoms, and 62.9% of nurses have moderate knowledge. Meanwhile, 22.4% possessed high knowledge. The mean score for Blood Glucose Monitoring was lower, at 2.79, and the mean percentage score was 55.8%.

In terms of Medication, the percentage of nurses with low knowledge was noticeably higher at 15.3%. A majority (62.9%) fell in the moderate category, while 15.9% have high knowledge. The mean score for this aspect was 6.64, with a mean percentage score of 55.33%.

Table 2. *Level of knowledge across participants' socio-demographic characteristics*

VARIABLES	LEVEL OF KNOWLEDGE						MEAN SCORE
	LOW		MODERATE		HIGH		
	N	%	N	%	N	%	
AGE							
22–31	2	3.39	48	81.36	9	15.25	17.00
32–41	2	2.53	62	78.48	15	18.99	17.43
42–51	1	5.56	12	66.67	5	27.78	18.17
52–61	1	25	3	75	0	0	12.75
GENDER							
FEMALE	5	4.27	83	70.94	29	24.79	17.40
MALE	2	4.65	39	90.70	2	4.65	16.79
LENGTH OF SERVICE							
0–4	3	3.03	76	76.77	20	20.20	16.89
5–9	2	8.70	19	82.60	2	8.70	17.43
10–14	1	5.26	13	68.42	5	26.32	19.05
15–19	0	0	9	69.23	4	30.77	18.46
20+	0	0	5	100	0	0	13.17

VARIABLES	LEVEL OF KNOWLEDGE						MEAN SCORE
	LOW		MODERATE		HIGH		
	N	%	N	%	N	%	
AREA OF ASSIGNMENT							
2A	1	7.69	8	61.54	4	30.77	16.62
2B	1	6.25	14	87.5	1	6.25	16.19
3A	1	10	7	70	2	20	15.00
3B	0	0	4	80	1	20	15.80
3C	0	0	15	75	5	25	18.10
3D	0	0	15	93.75	1	6.25	16.44
4A	1	9.09	7	63.64	3	27.27	16.55
ER	0	0	9	100	0	0	18.67
HD	0	0	6	85.71	1	14.29	18.57
HOSPITAINER	0	0	8	72.73	3	27.27	19.45
MICU	1	33.33	0	0	2	66.67	18.33
PICU	1	12.5	6	75	1	12.5	16.75
RICU	1	7.69	9	64.29	3	23.08	18.60
SICU	0	0	6	60	4	40	16.92
STU	0	0	8	100	0	0	17.50
HIGHEST EDUCATIONAL ATTAINMENT							
Bachelor of Science in Nursing	6	3.90	119	77.27	29	18.83	17.18
Master's Degree with Units	1	20	2	40	2	40	18.60
Master's Degree Graduate	0	0	0	0	0	0	0
Doctor's Degree with Units	0	0	0	0	0	0	0
Doctorate Degree Graduate	0	0	1	100	0	0	19.00

Table 2 shows the level of knowledge of nurses about diabetes across the following socio-demographic characteristics: age, gender, length of service, area of assignment, and highest educational attainment.

For age, nurses aged 22–31 years predominantly fell within the moderate knowledge category (81.36%), with only 15.25% in the high knowledge group. This percentage increased slightly for the 32–41 years age group, where 18.99% achieved high knowledge. In the 42–51 years category, 27.78% had high knowledge with a mean score of 18.17. However, for the 52–61 years group, there was a decline, with 75% classified as having moderate knowledge and a low mean score of 12.75 for the group.

In terms of gender, female nurses showed a slight advantage, with 24.79% achieving high knowledge compared to only 4.65% of males. Most female nurses fell in the moderate category (70.94%), with a mean score of 17.40 for the group, while male nurses have a higher percentage (90.70%) in the moderate category and a lower mean score of 16.79.

For length of service results showed that knowledge increases with experience up to 19 years. Nurses with 0–4 years of service were predominantly in the moderate knowledge group (76.77%), with 20% in the high category. However, in the 5–9 years group, fewer nurses (8.70%) fell in the high knowledge category. A notable increase was seen in nurses with 10–14 years of experience, where 26.32% have high knowledge, and this trend continued in the 15–19 years group, where 30.77% fell in the high category. However, after 20+ years, all nurses remained in the moderate category, and the mean score dropped to 13.17. In terms of the area of assignment, nurses in the Emergency Room (ER) and those designated as Hospitainer exhibited the highest mean scores (18.67 and 19.45, respectively). Results also showed that 66.67% and 23.08% of nurses assigned to the Intensive Care Units (MICU, RICU), respectively, belonged to the high knowledge category.

Regarding highest educational attainment, nurses with a Bachelor of Science in Nursing (BSN) mainly fell in the moderate knowledge category (77.27%), with 18.83% in the high category, achieving a mean score of 17.18 for the group. Those with a master's degree with Units showed a higher percentage of nurses possessing high knowledge (40%), with a mean score of 18.60 for the group. The lone nurse with a Doctoral Degree was classified in the high knowledge category, with a mean score of 19.00.

Table 3. *Knowledge levels of nurses on diabetes mellitus*

LEVEL OF NURSES' KNOWLEDGE					
LOW		MODERATE		HIGH	
N	%	N	%	N	%
6	3.75	125	78.1	29	18.1
Mean	17.24		Standard Deviation		3.512

Table 3 presents the overall level of knowledge of 160 nurses regarding diabetes mellitus, broken down into three categories: low, moderate, and high. Out of the total, only 6 nurses (3.75%) were identified as having a low level of knowledge. A significant majority of the nurses, 125 (78.1%), were categorized as having a moderate level of knowledge. Finally, 29 nurses (18.1%) demonstrated high knowledge of diabetes mellitus. The mean score of the participants was 17.24 with a standard deviation of 3.512.

DISCUSSION

The study offers valuable insights into the understanding of LCP nurses about diabetes mellitus and how socio-demographic factors influence their knowledge. In general, nurses demonstrated a moderate level of knowledge, particularly in areas such as diabetes pathology, symptoms, blood glucose monitoring, and medication management. Unlike earlier studies, such as Alotaibi et al. (2016), which reported poor knowledge of diabetes among nurses, this study showed that nurses at LCP possess adequate knowledge, although there are gaps in certain areas of care. The analysis of nurses' level of knowledge on diabetes reveals interesting patterns across different socio-demographic variables. Younger nurses, particularly those aged 22–31, mostly fell into the moderate knowledge category, while nurses in the 42–51 age group showed higher proficiency, indicating that clinical experience plays a role in enhancing knowledge, suggesting mid-career professionals have a better grasp of diabetes knowledge. This underscores the importance of mentorship and practical training for newer nurses. However, for the 52–61 years group, there was a decline, indicating that knowledge may taper off in later years. Overall, results showed that mid-career nurses tend to have higher diabetes knowledge, while older nurses may experience a slight decline.

The study also found that female nurses had slightly higher knowledge levels than males, possibly due to differences in educational access or interest. Addressing these gender disparities is important for designing effective educational interventions. Experience also played a role, with knowledge generally improving up to 19 years of service but declining after 20 years, emphasizing the need for ongoing professional development to maintain skills.

Similar to findings by Davies and Buxton (2015) in teaching hospitals, nurses aged 41–50, Senior Nursing Officers, and those with one month or three semesters of diabetes training had more adequate knowledge. Additionally, females, nurses aged 20–30, and those with a diploma or one semester of diabetes training were also more knowledgeable.

Nurses in high-stress environments, such as the Emergency Room and Intensive Care Units, demonstrated the highest levels of diabetes knowledge, highlighting the value of specialized training in diabetes care, indicating that working in critical environments likely enhances knowledge. These results highlight the importance of specialized assignments in building expertise in diabetes care.

Lastly, the study found that nurses holding advanced degrees outperformed those with only a bachelor's degree. This emphasizes the strong correlation between higher educational attainment and greater diabetes knowledge and the need for nursing education programs to include comprehensive diabetes care.

In the study, only 6 nurses were identified as having a low level of knowledge. This is a positive sign, as it suggests that only a small minority of nurses may require additional training or education on the topic. However, these 6 nurses could still pose a risk in the quality of care provided to diabetic patients, particularly if they are in positions where diabetes management is crucial.

In the overall level of knowledge of nurses in general have a moderate level of knowledge on diabetes mellitus this indicates that most nurses have a functional understanding of diabetes management, it may also reflect that there is still room for improvement in ensuring that the entire nursing team reaches a higher level of proficiency. The fact that such a large proportion of nurses are in the "moderate" range implies that the institution may benefit from continuous education programs or refresher courses to elevate this group into the "high" knowledge category. Though, few nurse have high knowledge of diabetes mellitus, ideally, this should be higher given the increasing prevalence of diabetes and its associated complications. Nurses with high knowledge are typically able to deliver more effective patient education, make better clinical decisions, and potentially identify early complications, all of which are essential in managing this chronic condition. Despite of, the scores are relatively widespread around

the average. This indicates variability in the knowledge levels among nurses. Some nurses are significantly more knowledgeable than others, which might reflect differences in educational background, experience, or personal interest in diabetes care.

In conclusion, the study emphasizes the need for targeted educational strategies and continuous training to improve nurses' knowledge of diabetes management. Future research should focus on assessing the effectiveness of specific educational programs in enhancing diabetes knowledge among nurses.

LIMITATION OF THE STUDY

The study has several limitations that should be noted. First, because the study only examined data using descriptive statistics, results cannot be generalized to other populations. The cross-sectional design restricts the ability to establish causal relationships between socio-demographic factors and diabetes knowledge, and reliance on self-reported data may lead to bias. Additionally, the study focused on only three specific areas of knowledge, which may not encompass all relevant aspects of diabetes care. Other potentially influencing factors, such as prior training in diabetes management, were not considered, nor were variations within educational programs accounted for. Finally, the findings suggest a decline in knowledge among older nurses and those with longer service, but the study did not explore whether this was due to a lack of ongoing training or changes in clinical guidelines.

CONCLUSIONS

This study showed that nurses' level of knowledge was moderate but insufficient. Knowledge of diabetes care plays a significant role in managing and treating patients to prevent complications of diabetes. Therefore, formal training and/or continuous training and improvement on knowledge are important factors since it is dynamic, evolving, and advancing.

RECOMMENDATIONS

Based on the conclusions the researchers recommend developing targeted diabetes care training programs based on identified knowledge gaps. Mentorship programs and peer learning can foster continuous education, allowing less-experienced healthcare professionals to learn from specialists. Knowledge-sharing networks can facilitate discussions on new insights and challenges. Additionally, advocating for healthcare institutions and regulatory bodies to prioritize ongoing diabetes education, possibly linking it to incentives or accreditation, is essential. Institutions should also ensure time and resources are available for staff participation without increasing their workload.

To address variations in diabetes knowledge among healthcare providers based on age, gender, length of service, area of assignment, and educational attainment, tailored strategies are recommended. For senior nurses, combine traditional and digital tools, with refresher courses on recent advances. Younger nurses may benefit from e-learning, mobile apps, and interactive sessions. Gender-sensitive approaches should engage male nurses more, with balanced representation in leadership roles. Training should be customized by experience: foundational programs for less-experienced nurses and advanced modules for seasoned nurses. Area-specific training should cater to settings like emergency, ICU, and primary care, with cross-training to broaden diabetes management skills across different environments.

AUTHORSHIP

All authors have certified fulfillment of scientific proceedings authorship criteria.

DISCLOSURE

All authors have no conflicts of interest to disclose.

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APPENDIX

Instrument

Instructions: Kindly provide the information being asked below.

I. Demographic Profile

Code No.:	
Age:	Sex: ☐ Male ☐ Female
Length of Service:	Area of Assignment:
Nurse Designation: ☐ Nurse 1 ☐ Nurse 3 ☐ Nurse 2	Employment Status: ☐ Job Order ☐ Permanent
Highest Educational Attainment ☐ Bachelor of Science in Nursing ☐ Master's Degree with Units ☐ Master's Degree Graduate ☐ Doctorate Degree with Units ☐ Doctorate Degree Graduate	
Have you provided diabetes Care? ☐ Yes ☐ No	
Do you have access to Diabetes Management policies or guidelines? ☐ Yes ☐ No	
Have you attended a Diabetes Educational Training Program? ☐ Yes ☐ No	

Diabetes Basic Knowledge Test (DBKT)

Instructions:

- For each item, select the best answer to the question. The last answer to each question, "I don't know" should be used if you truly do not know the answer.
- Encircle the letter corresponding to your answer. If you opt to change your answer just cross out your previous answer. Please do not write on the questionnaire.
- Please answer all the questions.

1. Which statement is characteristic of the etiology of Type 1 diabetes?
   a. strongly associated with obesity
   b. predominantly genetic
   c. autoimmune, viral, or toxic destruction of the beta cells
   d. I do not know

2. Which of these statements about the management of Type 1 diabetes is true?
   a. Insulin injections are necessary to maintain life
   b. insulin injections are not always necessary if diet and exercise are well controlled.
   c. oral hypoglycemic agents are sufficient for blood control in most patients
   d. I do not know.

3. Which statement is characteristic of the etiology of Type II diabetes?
   a. predominately non-genetic
   b. frequently associated with obesity and resistance to insulin
   c. autoimmune, viral, or toxic destruction of the beta cells
   d. I do not know.

4. Which of these statements about the management of Type II diabetes is true?
   a. insulin injections are necessary to maintain life.
   b. A controlled diet and exercise program is the most effective treatment.
   c. Oral hypoglycemic agents are sufficient for blood control in most patients
   d. I do not know.

5. What effect does insulin have on blood glucose?
   a. insulin causes blood glucose to increase
   b. insulin causes blood glucose to decrease
   c. insulin does not affect blood glucose
   d. I do not know
6. What are the physiological actions of insulin?
   1. transports glucose across cell membranes for use by the cells
   2. enhances the formation of proteins for amino acids
   3. enhances the breakdown of fats for energy
      a. 1 and 2
      b. 1, 2 and 3
      c. 1 and 3
      d. 2 and 3
      e. I do not know

7. If a person with diabetes is found unresponsive which of these assumptions should guide your initial actions?
   a. The blood sugar may be very high
   b. The blood sugar may be very low
   c. The blood sugar may be normal
   d. I do not know

8. Normal fasting blood glucose level (FBS) can be best described as:
   a. 3.6 – 5.6 mmol/L
   b. 4.6 – 6.1 mmol/L
   c. 4.1 – 5.9 mmol/L
   d. I do not know

9. Which of the following affects the accuracy and preparation of test results obtained with most of the blood glucose strips?
    1. size and placement of the blood sample
    2. timing of the test
    3. expiration of test strips
    4. the patient's hematocrit level
        a. 1, 2 and 3
        b. 1, 2 and 4
        c. 1, 2, 3 and 4
        d. I do not know

10. Which of the following tests can determine the patient's average blood glucose control over an extended period of time?
    a. glycosylated hemoglobin (HbA1c)
    b. plasma renin activity (PRA)
    c. insulin antibodies
    d. I do not know

11. What should a nurse do if a patient with diabetes has a blood glucose greater than 240 mg/dl for two consecutive days and now has positive ketone urine tests?
    a. Omit the next dose of insulin or oral hypoglycemic medication and test blood as usual.
    b. Call the doctor, continue to test blood every four hours or as directed by the physician, and continue insulin or oral hypoglycemic medication.
    c. Continue with insulin or oral hypoglycemic medication and blood testing as usual. These are normal results for diabetics.
    d. I do not know.

12. The maximum effect (peak) of regular insulin occurs:
    a. 2–4 hours after injection
    b. 6–12 hours after injection
    c. 24–28 hours after injection
    d. I do not know

13. The maximum effect (peak) of intermediate–acting insulin occurs:
    a. 2–4 hours after injection
    b. 8–12 hours after injection
    c. 24–28 hours after injection
    d. I do not know

14. Where should the nurse store the insulin that is presently being used?
    a. in the refrigerator near the freezer section
    b. in the refrigerator away from the freezer section
    c. at room temperature away from the excess light
    d. I do not know

15. A nurse contaminates the needle while preparing an insulin injection. What would be the best action to take?
    a. Dispose of the needle even if this means disposing of the insulin and syringe and starting the preparation from the beginning.
    b. Wipe the needle with an alcohol sponge and continue preparing the injection.
    c. Continue to prepare the injection but wipe the injection site thoroughly with alcohol.
    d. I do not know

16. When short–acting and intermediate–acting are ordered to be given by injection at the same time the nurse should:
    a. Use separate syringes to administer each insulin
    b. Mix them in the syringe drawing up the intermediate–acting first.
    c. Notify the doctor since these two insulins should not be given together.
    d. Mix them in the syringe drawing up the short–acting first.
    e. I do not know.

17. A symptom of hypoglycemia (low blood sugar) is:
    a. frequent urination
    b. dry mouth and dry skin
    c. nervousness
    d. I do not know.

18. A symptom of hyperglycemia (high blood sugar) is:
    a. frequent urination
    b. low-grade fever
    c. cool clammy skin
    d. I do not know.

19. What is one cause of hypoglycemia (low blood sugar) in someone who is taking insulin or oral hypoglycemic agents?
    a. skipping a meal
    b. emotional stress
    c. too little exercise
    d. I do not know

20. What is one cause of hyperglycemia (high blood sugar)?
    a. decreased food intake
    b. infection
    c. excessive insulin
    d. I do not know

21. One symptom associated with diabetic ketoacidosis (diabetic coma) is:
    a. cold, clammy skin
    b. acetone (fruity) breath
    c. negative urine for glucose
    d. I do not know

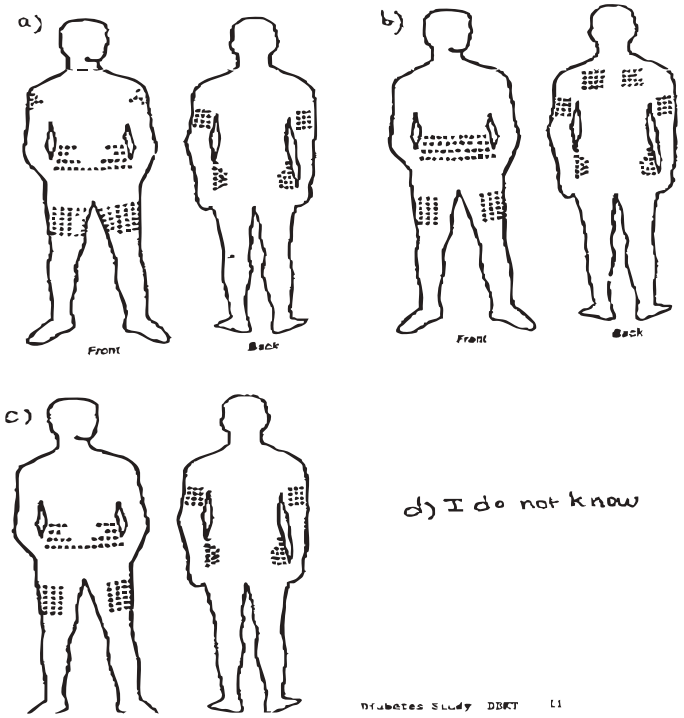
22. In general, changes in the pattern of insulin administration for the person undergoing surgery might include which of the following?
    a. Increase the dose of long-acting insulin the night before and the morning of surgery.
    b. Discontinue all subcutaneous insulin on the day of surgery and instead infuse long-acting insulin intravenously at a constant drip.
    c. On the day of surgery, reduce the usual a.m. dose of insulin and give subcutaneous or IV boluses of short-acting insulin per frequent blood glucose monitoring results
    d. I do not know

23. Which of the following long-term complications are associated with diabetes?
    a. eye changes
    b. renal and cardiovascular changes
    c. nervous system changes
    d. all of the above
    e. I do not know

24. The effects of physical and emotional stress on diabetes control include:
    a. The secretion of stress hormones causes an elevation in blood glucose levels.
    b. The secretion of stress hormones causes a decrease in blood glucose levels.
    c. the secretion of stress hormones that do not affect blood glucose levels
    d. I do not know

25. Which is the BEST action to take for a person with diabetes who is having a hypoglycemic reaction (low blood sugar)?
    a. drink regular soda
    b. drink orange juice with 2 tsp. of sugar
    c. eat crackers with butter or margarine
    d. I do not know

26. Which of the following sets of figures best illustrated the correct sites for subcutaneous insulin administration?



27. Continuous insulin infusion therapy (insulin pumps) can be a treatment option for which of the following types of diabetes?
    a. Type 1 diabetes
    b. Type 2 diabetes requiring insulin injections
    c. Both type 1 and type 2 require insulin injections
    d. I do not know

28. Studies have found a clear genetic link in the onset of type 1 diabetes and little or no environmental factors leading to the development of this disease.
    a. True
    b. False
    c. I do not know

29. Which of the following insulins have an onset time of 0–15 minutes?
    a. Glargine (Lantus)
    b. NPH (Humalin N, Novalin N)
    c. Lispro (Humalog)
    d. Regular (Humalin R, Novalin R)
    e. I do not know

30. The American Diabetes Association's goal for optimal glycemic control is a glycosylated hemoglobin (HbA1c) of:
    a. less than 7%
    b. 7–9 %
    c. 9–11%
    d. I do not know

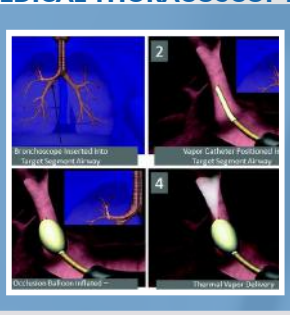
Source of test: Modified version of "Diabetes Knowledge Test" by Sandra Scheiderich
Revised for use in 2007 by Sally Gerard.

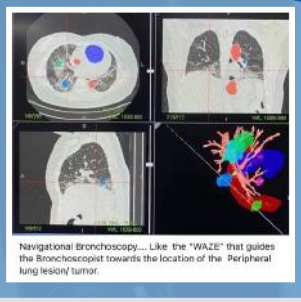
LUNG CENTER OF THE PHILIPPINES

INTERVENTIONAL PULMONOLOGY

Available Services:

- ENDOBRONCHIAL ULTRASOUND (EBUS) BRONCHOSCOPY (CONVEX AND RADIAL)
- BRONCHOSCOPIC CRYOTHERAPY
- ENDOBRONCHIAL ELECTROCAUTERY AND ARGON PLASMA COAGULATION
- NAVIGATIONAL BRONCHOSCOPY
- BALLOON BRONCHOPLASTY
- ENDOBRONCHIAL STENT PLACEMENT
- BRONCHOSCOPIC THERMAL VAPOR ABLATION (BTVA) - *COMING SOON*
- ULTRASOUND GUIDED THORACENTESIS, PLEURAL CATHETER INSERTION, TRANSTHORACIC CORE NEEDLE BIOPSY
- MEDICAL THORACOSCOPY





Navigational Bronchoscopy.... Like the "WAZE" that guides the Bronchoscopist towards the location of the Peripheral lung lesion/ tumor.

CONTACT US:

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LUNG CENTER OF THE PHILIPPINES
Scientific Proceedings

ORIGINAL ARTICLE

EFFECTIVENESS OF IMPLEMENTING A TB PREVENTIVE TREATMENT (TPT) PROGRAM INITIATIVE IN A TERTIARY GOVERNMENT HOSPITAL IN SCREENING FOR LATENT TB INFECTION (LTBI)

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ABSTRACT

Introduction. Tuberculosis (TB) remains a significant health issue, especially in countries with a high disease burden. In various settings, including tertiary government hospitals, there is a need for thorough TB control strategies that involve preventive treatment for vulnerable groups. Launching a TPT (Tuberculosis Preventive Treatment) initiative can play a crucial role in lessening the TB burden within communities and enhancing patient outcomes.

Objective. The study aims to present the outcomes of early detection of LTBI in a tertiary government hospital. The key objectives are to describe the demographic and clinical characteristics of patients eligible for LTBI screening and to assess the outcomes of the screening process.

Methodology. This is a descriptive retrospective study conducted at a tertiary government hospital. The study involved patients identified as close contacts of active TB cases and those referred by attending physicians. Data were collected from the hospital's TB registry and analyzed using descriptive statistics to summarize the patients' age, sex, chest X-ray, and Tuberculin Skin Test (TST) results.

Results. A total of 696 patients were identified as candidates for LTBI screening. The majority (40.8%) were aged 19 to 40 years, and 51.1% were female. Screening revealed that 75.6% of patients required no further treatment, while 17.1% were started on TPT, and 6.5% began Regimen 1 treatment. A significant portion of patients (96.5%) did not complete the TST.

Conclusion. The study demonstrates the effectiveness of LTBI screening in identifying high-risk patients for TPT. However, improvements in the screening process, particularly in ensuring the completion of necessary diagnostic tests, are essential to enhance TB preventive efforts in the Philippines.

Keywords. TB preventive treatment, tuberculosis, latent TB infection, screening process, initiative

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INTRODUCTION

Tuberculosis (TB) is still a major health problem particularly in high-burden countries. In 2022, approximately 10 million people developed TB.[1] With this, the End TB strategy aims to achieve a world free of TB, with zero deaths, disease and suffering due to the disease and propose to strategically end the global TB epidemic by 2035.[2] Despite progress in reducing TB incidence and mortality, challenges remain in achieving the targets set by the End TB Strategy. The report indicates a high TB incidence rate, necessitating enhanced TB control measures, including TB Preventive Treatment.[1,3] In many settings, including tertiary government hospitals, there is a need for comprehensive TB control strategies that include preventive treatment for high-risk populations. Implementing a TPT initiative can significantly contribute to reducing the burden of TB in the community and improving patient outcomes.[4]

Preventive treatment for tuberculosis is a key component of the "prevention is better than cure" approach. Administering TB preventive treatment to individuals at high risk, such as those in close contact with active TB cases or individuals with latent TB infection, can significantly reduce the risk of developing active TB disease. It is an important strategy to stop the progression of the infection before it becomes a full-blown illness.[5] According to the World Health Organization (WHO), TPT can decrease this risk by approximately 60-90%,[6] depending on the specific regimen used and the level of adherence to the treatment. Similarly, the Centers for Disease Control and Prevention (CDC) reports that TPT, particularly with regimens like isoniazid, can reduce the likelihood of developing active TB by 60-90%.[4] These findings underscore the importance of TPT as an effective strategy in preventing the onset of active TB, particularly in high-risk populations.[5]

TPT is also recommended for people living with HIV, as they are more susceptible to TB. Public health initiatives focusing on education, early detection, and access to preventive therapies contribute to a comprehensive approach in minimizing the impact of tuberculosis. Regular monitoring and follow-up are crucial to ensure the effectiveness of preventive measures. Community engagement and awareness campaigns play a pivotal role in encouraging individuals to seek preventive measures for tuberculosis. Creating supportive environments that reduce stigma associated with TB can enhance early detection and treatment adherence. Adequate resources and healthcare infrastructure are essential for the successful implementation of preventive strategies, emphasizing the importance of a multi-faceted, collaborative approach in tackling tuberculosis.[5,7]

Furthermore, according to the Department of Health Philippines-National Tuberculosis Control Program Annual Report 2023,[8] contact tracing and targeted interventions in high-burden areas contribute to breaking the chain of TB transmission. Efforts to address social determinants of health, such as poverty and malnutrition, also indirectly support TB prevention by improving overall community well-being. A holistic approach that combines medical interventions with broader socio-economic strategies strengthens the effectiveness of preventing tuberculosis. Implementing a TPT initiative is crucial for several reasons. TPT has been shown to effectively reduce the risk of developing active TB among individuals with latent TB infection (LTBI), thereby decreasing the overall burden of TB in the community. This initiative is also a key component of patient-centered care, especially for high-risk groups such as healthcare workers, people living with HIV, and close contacts of TB patients. By offering TPT, healthcare providers can deliver comprehensive care that not only treats active TB but also prevents its development. Additionally, TPT plays a vital role in preventing TB transmission, as it reduces the risk of individuals with LTBI progressing to active TB, which could be spread to others within healthcare settings and the community. Moreover, TPT is a cost-effective intervention, as treating LTBI is far less expensive than managing active TB, especially when considering the costs associated with prolonged hospitalization and treatment. Implementing TPT also aligns with global efforts, such as the World Health Organization's End TB Strategy, which highlights TPT as a key intervention for TB control. This approach is not only medically beneficial but also ethically sound, reflecting a commitment to providing the best possible care to patients and protecting public health. In summary, introducing a TPT initiative in a tertiary government hospital is a critical step toward reducing TB prevalence, improving patient outcomes, and supporting global health goals.[5]

The study by Sterling et al.[9] evaluated the effectiveness of a 3-month regimen of rifapentine and isoniazid (3HP) for latent tuberculosis infection (LTBI). This study was pivotal in demonstrating the efficacy, adherence, and safety of TPT regimens. The study found that the 3HP regimen was as effective as the traditional 9-month isoniazid regimen in preventing the development of active TB. One of the significant advantages of the 3HP regimen was its shorter duration, which resulted in higher completion rates compared to the longer 9-month isoniazid regimen. The safety profile of the 3HP regimen was found to be like that of the longer isoniazid regimen, indicating that the shorter 3HP regimen did not compromise safety. Swindells et al.[10] evaluated the effectiveness of a 1-month regimen of rifapentine plus isoniazid (1HP) in preventing TB among people living with HIV. The 1HP regimen was found to be non-inferior to the standard 9-month isoniazid regimen in preventing TB among people living with HIV. The shorter duration of the 1HP regimen resulted in higher adherence rates, and the study reported a similar safety profile to the longer isoniazid regimen. On the other hand, Nyirenda et al.[11] conducted a cost-effectiveness analysis of the 3-month isoniazid and rifapentine regimen (3HP) for the treatment of LTBI in HIV-positive patients in South Africa. The analysis showed that the 3HP regimen was cost-effective compared to the traditional 9-month isoniazid regimen. The shorter duration of treatment led to lower overall healthcare costs due to

reduced clinic visits and improved adherence. By improving adherence and reducing the duration of treatment, the 3HP regimen can have a substantial positive impact on public health, particularly in resource-limited settings where TB and HIV co-infection rates are high. Overall, the literature highlights the effectiveness of shorter TPT regimens, such as 3HP and 1HP, in preventing TB. These regimens not only match the efficacy of traditional longer regimens but also offer advantages in terms of adherence, safety, and cost-effectiveness. The findings underscore the potential for shorter regimens to enhance TB prevention efforts, particularly in high-risk populations and resource-limited settings.

While TB preventive treatment (TPT) offers significant benefits in reducing the risk of developing active tuberculosis, there are several disadvantages and challenges associated with its implementation and use. TPT regimens can cause adverse drug reactions, which may range from mild to severe. Also, incomplete adherence to TPT regimens can lead to the development of drug-resistant TB strains. This is a significant concern, especially in settings with high TB prevalence and limited healthcare resources to monitor and support patient adherence.[12] Although shorter regimens like 3HP are cost-effective in the long run, the initial costs of drugs, screening, and healthcare infrastructure can be high. Resource-limited settings may struggle with the financial burden and logistical challenges of implementing widespread TPT programs.5 Additionally, the need for regular monitoring and follow-up can strain healthcare systems already burdened by high patient loads and limited personnel.[12]

The main purpose of this study is to present the outcomes of early detection of LTBI in a tertiary government hospital. The objectives of this study are as follows:

1. Describe the demographic and clinical characteristics of patients that are candidate for LTBI screening from January 2023 to July 2024 in terms of age, sex at birth, reasons for screening (close contact of TB patient, walk-in patient [referred by attending physician]), chest x-ray result, TST result
2. Determine the result of screening process for LTBI from January 2023 to July 2024 in terms of treatment (no treatment needed; for TB preventive treatment; for Regimen 1 treatment).

METHODOLOGY

This is a descriptive retrospective study that examined the enrolled LTBI patients at the Lung Center of the Philippines-TB DOTS from January 2023 to July 2024 which included close contacts of ongoing Drug-susceptible Tuberculosis (DSTB) patients and walk-in patients referred by their attending physician. A descriptive retrospective research design is a type of study that looks back at past events or phenomena to understand them and describe their characteristics. In this design, researchers collected data from historical records, documents, or other sources that analyzed and reported on what has happened in the past. The study was conducted at the Lung Center of the Philippines, a tertiary government hospital. Data was collected from the hospital's TB registry and enrolled in a DSTB patient's monitoring chart. The researcher will use a table to summarize close contact investigation in the Lung Center of the Philippines-TB DOTS from January 2023 to July 2024. Descriptive statistics will be used to summarize the data. Data will be presented through frequency and percentages.

BASELINE SETTING	TPT ORIENTATION / TRAINING	CONTACT TRACING STRATEGY AND PARTNERSHIP	RESEARCH INVOLVMENT
Generate a comprehensive report on the current close contact investigation among enrolled TB patients indcluding their age, sex at birth, relationship to index case and chest x-ray result.	Coordination with the Chief Fellow regarding the availability of Pulmonary Fellows to attend orientation regarding TB preventive treatment.	Identify contacts of enrolled TB patients.	Create research proposal for close contact investigation profiling and outcome.
Generate a comprehensive report on the current investigation screening outcome among close contacts of enrolled TB patients such as (a) no treatment / for surveillance (b) for TB preventive treatment and (c) or further evaluation (for sputum gene xpert / for first line TB treatment.	Conduct orientation to Pulmonary Fellows.	Provide signs and symptoms monitoring and request for chest x-ray	Request for approval to conduct research.
Check availability of supplies / medicines for TPT	Evaluate learnings regarding the orientation.	Refer to LCP Social Service Department / Malasakit Center for chest x-ray financial assistance.	Implement research.
Create an evaluation regarding the report.	Evaluate readiness to apply TB preventive treatment among high risk patients.	Evaluate contacts if for (a) no treatment / for surveillance (b) for TB preventive treatment and (c) or further evaluation (for sputum gene xpert / for first line TB treatment.	Report findings and recommendations.
Create an action plan following the evaluation.		Monitor patients regularly.	

Figure 1. *Process Flow of Implementing a TB Preventive Treatment Initiative at the Lung Center of the Philippines*

To aid in the increase of screened patients and enrollments under TPT, an initiative from Public Health and Domiciliary Division of LCP as shown in figure 1 will include:

1. Baseline setting which is the initial assessment or establishment of certain key factors before implementing a preventive treatment program. This is crucial for planning, monitoring, and evaluating the effectiveness of the intervention. This will include assessment of TB incidence rate, close contact investigation and capacity to deliver TPT;
2. Conducting of TPT Orientation/Training. This orientation/training is designed to equip healthcare professionals, including doctors and nurses, with the knowledge and skills necessary to effectively implement and manage TB preventive treatment programs. It typically covers various aspects, including the identification of individuals at high risk, the administration of preventive therapies, monitoring for side effects, and overall program management. This is

essential to ensure that healthcare providers are well-prepared to contribute to the success of TB preventive treatment initiatives;

3. Implementing contact tracing strategy and partnerships which is essential to trace and screen individuals who have been in contact with active TB cases, preventing further transmission. Also, finding the right partners to implement TB preventive treatment programs is crucial. And lastly, research involvement in TB preventive treatment, which is crucial for treatment effectiveness, optimizing treatment protocols, identification of high-risk populations, innovations in diagnostics, health systems strengthening, and creation of global policies and guidelines. Research involvement is essential to continually enhance the effectiveness, accessibility, and impact of TB preventive treatment programs, contributing to global efforts to control and eliminate tuberculosis.

Screening Process / Eligibility Checking for TB Preventive Treatment

CRITERIA			CHEST XRAY RESULT	TST NOT REQUIRED (Eligible for TPT)	TST Required (Eligible for TPT only if positive with TST)	NOT Eligible for TPT
HOUSEHOLD CONTACT	BC INDEX	Less than 5 years old	Normal	👍		
		More than 5 years old with TB risk (high risk)	Normal	👍		
		More than 5 years old with NO TB risk	Normal		👍	
	CD INDEX	Less than 5 years old	Normal		👍	
		More than 5 years old	Normal			👍
CLOSE CONTACT	BC INDEX	All ages	Normal		👍	
	CD INDEX	All ages	Normal			👍
PLHIV		More than 1 year old	Normal	👍		
		Less than 1 year old (If not a contact of a person with TB)	Normal			👍
OTHER RISK GROUP		Patient receiving Dialysis	Normal		👍	
		Patients preparing for an organ or hematological transplantation	Normal		👍	
		Patients initiating anti-TNF treatment	Normal		👍	
		Patients with scoliosis	Normal		👍	

👍 Note: If with findings in chest xray, proceed with active TB screening

Figure 2. *Criteria for Identification of Individuals Eligible for TB Preventive Treatment*

To identify individuals eligible for TB preventive treatment (TPT), certain high-risk groups should undergo evaluation. These include PLHIV aged one year and older (regardless of contact history), all household contacts of bacteriologically confirmed pulmonary TB (PTB) cases, children under five years old who are household contacts of clinically diagnosed PTB, close contacts of bacteriologically confirmed PTB outside the household, and individuals with other risk factors such as dialysis patients, those preparing for organ or hematological transplantation, patients starting anti-tumor necrosis factor (TNF) treatment, and those with silicosis. Contacts of multi-drug resistant (MDR-TB) or rifampicin-resistant TB (RR-TB) cases should not receive TPT but should be monitored with symptom screening, chest X-rays, or Xpert tests every six months for at least two years. Before TPT initiation, active TB must be excluded by assessing symptoms and performing chest X-rays, following diagnostic procedures if TB is suspected. Certain groups, such as PLHIV, children under five years old who are household contacts of bacteriologically confirmed PTB, and individuals aged five years and older with TB risk factors, do not require tuberculin skin tests (TST) before starting TPT, provided active TB is ruled out. However, TST is recommended for children under five years old who are household contacts of clinically diagnosed PTB, household contacts of bacteriologically confirmed PTB aged five

years and older without other risk factors, close contacts of bacteriologically confirmed PTB, and those with specific medical conditions like silicosis or dialysis. If TST is positive or if eligible without TST, TPT should be initiated.[12]

Definition of Terms

Latent tuberculosis infection (LTBI) – refers to a condition where an individual has a persistent immune response to Mycobacterium tuberculosis (MTB) antigens without showing any clinical signs or symptoms of active TB disease. Since there is no definitive "gold standard" test for directly identifying MTB infection, diagnosis relies on indirect methods. Most individuals with LTBI remain asymptomatic but carry a risk of progressing to active TB disease.[12]

TB Preventive Treatment (TPT) – also known as LTBI treatment or preventive therapy, is a course of medication given to individuals with LTBI to prevent the development of active TB.[12]

TPT treatment – the treatment regimens for LTBI provide several options tailored to patient needs and availability. The 6H regimen, consisting of daily isoniazid for six months, is the standard option under the TB program. The 3HP regimen, combining isoniazid and rifapentine weekly for three months, offers a shorter treatment duration but is contraindicated for pregnant individuals and children under two years old. For children, the 3HR regimen, a three-month daily combination of isoniazid and rifampicin, is preferred if 3HP is unavailable. Meanwhile, the 4R regimen, consisting of daily rifampicin for four months, is recommended for adults when 3HP is not an option.[12]

Contact investigation – is a systematic process aimed at identifying individuals with undiagnosed TB among those who have been in contact with a person diagnosed with TB (the index case). If the index case is a child, the investigation also involves identifying the source of their TB infection. Additionally, the process helps identify individuals who may be eligible for TB preventive treatment.[12]

RESULTS

Demographic and Clinical Characteristics of Patients that are Candidate for Latent TB Infection screening from January 2023 to July 2024

There are a total of 696 patients who are candidates for latent TB infection from January 2023 to July 2024, reflecting the population being monitored for potential tuberculosis exposure and infection during this period. These patients have been identified based on various screening criteria, including close contact with TB patients and referrals from attending physicians.

Table 1. *Age Distribution of Patients that are Candidate for Latent TB Infection from January 2023 to July 2024*

AGE	Frequency (N=696)	Precentage
0 – 18 Years Old	172	24.7%
19 – 40 Years Old	284	40.8%
41 – 60 Years Old	163	23.4%
60 Years Old and Above	77	11.1%

Table 1 presents the age distribution of 696 patients who were candidates for latent tuberculosis infection between January 2023 and July 2024. The majority were aged 19 to 40 years old (48.3%), indicating that this age group constitutes the largest portion of the population being monitored for latent TB infection. This is followed by the 0 to 18 years old group, which represents 24.7% of the candidates. The 41 to 60 years old group accounts for 23.4% of the total candidates, indicating that nearly a quarter of the screened population falls within middle adulthood. Finally, 11.1% of the patients are 60 years old and above.

Table 2. *Sex at Birth of Patients that are Candidate for Latent TB Infection from January 2023 to July 2024*

SEX AT BIRTH	Frequency (N=696)	Precentage
Male	340	48.1%
Female	356	51.1%

Table 2 summarizes the sex at birth of patients who are candidates for latent tuberculosis infection from January 2023 to July 2024. Out of a total of 696 patients, 340 were male, accounting for 48.1% of the candidates, while 356 were female, representing 51.9%.

Table 3. *Reason for Screening Distribution of Patients that are Candidate for Latent TB Infection from January 2023 to July 2024*

REASON FOR SCREENING	Frequency (N=696)	Precentage
Close Contact of TB Patient	660	94.8%
Walk-in Patient (Referred by Attending Physician)	36	5.2%

Table 3 presents the distribution of reasons for screening among patients who are candidates for latent tuberculosis (TB) infection between January 2023 and July 2024. 94.8% or most patients were screened because they were close contacts of a TB patient. In contrast 5.2% were walk-in patients referred by an attending physician.

Table 4. *Chest X-ray Result Distribution of Patients that are Candidate for Latent TB Infection from January 2023 to July 2024*

CHEST X-RAY RESULT	Frequency (N=696)	Precentage
With Findings	16	2.2%
Normal	229	33%
Not Done	451	64.8%

Table 4 outlines the distribution of chest X-ray results among patients who are candidates for latent tuberculosis (TB) infection between January 2023 and July 2024. Among the 696 patients, 64.8% did not undergo a chest X-ray. Of those who did, 33% had normal results 2.2% showed findings indicative for further evaluation and management of attending physicians.

Table 5. *TST Result Distribution of Patients that are Candidate for Latent TB Infection from January 2023 to July 2024*

TUBERCULIN SKIN TEST RESULT	Frequency (N=229)	Precentage
Positive	4	1.75%
Negative	4	1.75%
Not done	221	96.5%

Out of the 696 patients who were candidates for latent TB infection, 229 had a normal chest X-ray and were selected to undergo TST for further evaluation. Table 5 illustrates that, out of 229 patients with normal chest X-rays, only 1.7% tested positive for latent TB infection, suggesting that a very small portion of these patients might still have TB infection despite their normal chest X-ray results. Another 1.7% tested negative, indicating no TB infection based on the TST. However, most of these patients, 96.5%, did not complete the TST.

Result of the screening process for LTBI from January 2023 to July 2024

Out of the total 696 patients who were candidates for latent tuberculosis (TB) infection, 245 individuals underwent screening process for LTBI. This screening process was conducted to further assess their TB infection status and determine the appropriate course of action. The decision to screen these 245 patients was based on various factors, including their initial risk assessments and clinical guidelines, ensuring that those most in need of evaluation received the necessary follow-up.

Table 6. *Result of Screening Process Distribution for LTBI patients from January 2023 to July 2024*

RESULT OF SCREENING PROCESS	Frequency (N=245)	Precentage
No treatment needed	185	75.6%
Started with TB Preventive Treatment	42	17.1%
Started with Regimen 1 treatment	16	6.5%
Still for Consultation	2	0.8%

Table 6 showed the result of the screening process indicated that 75.6% of the patients required no further treatment, suggesting that they either did not have significant risk factors for latent TB infection. Additionally, 17.1% of the patients were started on TB preventive treatment, reflecting their higher risk of developing TB and the need for preventative measures. Another 6.5% began Regimen 1 treatment, which is a specific medication regimen aimed at treating TB disease. Finally, 1.2% of the patients were still awaiting consultation, meaning their cases were pending further review before a final treatment decision could be made.

DISCUSSION

The findings presented in this study provide valuable insights into the demographic and clinical characteristics of patients who were candidates for latent tuberculosis infection (LTBI) screening from January 2023 to July 2024, as well as the outcomes of the screening process. These results align with existing literature on the epidemiology and management of LTBI, particularly in high TB burden settings like the Philippines.

Demographic and Clinical Characteristics

The age distribution of patients (Table 1.1) indicates that most candidates for latent TB infection screening fall within the 19 to 40 years age group, which comprises 40.8% of the total population. This suggests that young adults are the primary demographic being monitored, likely due to their active participation in the workforce and greater social interactions, increasing their risk of exposure to TB. The substantial proportion of candidates aged 0 to 18 years old (24.7%) highlights the critical need for TB screening in children and adolescents, who are vulnerable to progressing from latent to active TB because of their developing immune systems.[13] The middle-aged group (41 to 60 years old) represents 23.4% of the population, emphasizing the importance of monitoring individuals who might still be exposed to TB in various occupational settings. Meanwhile, the smallest group, those aged 60 years and above, accounts for 11.1% of the total. Although this age group is smaller, it is particularly important as older adults are at higher risk of TB reactivation due to age-related immune decline.[2]

The balanced distribution between male and female candidates reflects a slight predominance of female patients in the study. This distribution is consistent with global trends, where men and women are similarly at risk for TB infection, though men are slightly more likely to develop active disease due to socioeconomic factors.[2]

The primary reason for LTBI screening, as shown in Table 1.3, was contact with a TB patient, which accounted for 94.8% of the cases. This aligns with the Philippine National TB Control Program (NTP) guidelines that prioritize screening for individuals who have been in close contact with TB patients, reflecting a high-risk population that requires careful monitoring.[12] The remaining 5.2% were walk-in patients referred by attending physicians, underscoring the role of clinical judgment in identifying potential TB cases beyond routine contact tracing.

The chest X-ray findings, as presented in Table 1.4, revealed that a significant proportion of patients (64.8%) did not undergo this diagnostic test. Among those who did,

33% had normal results, while 2.2% showed abnormalities requiring further evaluation. These findings are consistent with WHO recommendations that chest X-rays are valuable in TB diagnosis, particularly in screening programs aimed at detecting both latent and active TB.[14] The low percentage of abnormal findings suggests that the majority of screened patients did not have radiographic evidence of active TB, supporting the need for additional tests, such as the TST, to confirm LTBI.

Out of the 229 patients with normal chest X-rays who underwent the Tuberculin Skin Test (TST), only 1.7% tested positive for latent TB infection, a relatively low percentage that reflects the effectiveness of the initial screening criteria. However, the high percentage (96.5%) of patients who did not complete the TST suggests operational challenges, such as resource limitations or patient follow-up issues, which are common in large-scale TB control programs.[15]

Screening Process Outcomes

The results of the LTBI screening process indicate that 75.6% of the screened patients did not require further treatment. This suggests that these individuals either did not have LTBI or were not at significant risk of progressing to active TB, consistent with the NTP's criteria for treatment eligibility. [12] The initiation of TB preventive treatment in 17.1% of patients highlights the program's effectiveness in identifying those at higher risk and taking preventive measures. Meanwhile, the initiation of Regimen 1 treatment in 6.5% of patients indicates that some individuals had more significant TB disease, undetected during initial screening. This underscores the need for continuous monitoring and follow-up in TB programs to catch such cases early.[16]

The 0.8% of patients still awaiting consultation emphasizes the importance of timely decision-making and follow-up in TB management. Delays in consultation can lead to missed opportunities for early intervention, particularly in latent TB cases that could progress to active disease if left untreated.

CONCLUSION

In conclusion, this study highlights the demographic and clinical characteristics of patients screened for latent TB infection between January 2023 and July 2024. The age distribution data indicates that young adults and middle-aged individuals are the primary focus of TB screening efforts, reflecting their higher risk of exposure to TB. The inclusion of a significant proportion of children and adolescents underscores the importance of early detection and prevention strategies in these vulnerable groups. Although most of the patients did not require further treatment after screening, the study reveals the effectiveness of the screening process in identifying high-risk individuals and initiating preventive measures. However, the significant number of patients who did not complete chest X-rays or TST points to areas where program implementation could be improved, particularly in ensuring that all at-risk patients undergo the necessary diagnostic tests.

Moving forward, continued adherence to national guidelines and WHO recommendations, combined with efforts to overcome operational challenges, will be crucial in enhancing the effectiveness of LTBI management in the Philippines. Ensuring comprehensive screening and follow-up care, particularly for those most at risk, will help in achieving the broader public health goal of reducing the TB burden in the country.

AUTHORSHIP

All authors have certified fulfillment of scientific proceedings authorship criteria.

DISCLOSURE OF CONFLICT OF INTEREST

All authors have no conflict of interest to show the results of this study

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ORIGINAL ARTICLE

ENHANCEMENT OF HAND HYGIENE PRACTICES THROUGH SCRUB ALERT: A QUALITY IMPROVEMENT

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ABSTRACT

Background and Objectives. The enforcement of hand hygiene is a fundamental method for mitigating the spread of infections linked to health services. Hand Hygiene (HH) is widely acknowledged as the most effective strategy for preventing Healthcare-Associated Infections (HAIs); The objective of this study is to analyze the compliance rate with the recommended quality improvement strategy aimed at enhancing hand hygiene practices, mainly through the utilization of the scrub alert, and to delineate the factors that contribute to instances of missed attempts.

Methodology. The Quality Improvement Project (QIP) utilized the Plan-Do-Study-Act (PDSA) model, a systematic, four-phase approach designed for addressing issues and facilitating improvements in processes or organizational transformations. This framework evaluates the results of the changes that have been enacted. The sample size for the QIP was established by applying Cochran's formula, which maintained a confidence level of 95% and a precision level of 5%. The study focused on a population of 452, leading to 208 findings. The compliance of participants with the scrub alert was evaluated four times daily using a validated monitoring instrument that systematically recorded both adherence and occurrences of missed attempts. The selected participants' adherence to the scrub alert was subsequently evaluated through Covert Participant Observation, utilizing the validated Scrub Alert Monitoring Tool within a framework of cross-monitoring assessment.

Results. Employing Frequency and Distribution as a statistical tool for the three-month evaluation. The Nursing Services recorded a compliance rate of 90.9% for scrub alerts during the initial month, which subsequently increased to 98.1% in the second month, ultimately reaching a compliance rate of 97.86% by the conclusion of the evaluation period.

Conclusion. The review of the Quality Improvement Project (QIP) indicates that those involved in the QIP evaluation across various units reached a scrub alert compliance rate between an Average Total Compliance Rate of 82.2% and 100%. Notably, a significant number of the areas assessed achieved full compliance at 100% over the three-month evaluation period. The causes of non-compliance were primarily linked to justifiable emergency scenarios, such as intubations, resuscitations, and bedside surgical procedures.

Keywords. Scrub alert, hand hygiene, infection, hand washing habit, hand wash

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INTRODUCTION

On World Hand Hygiene Day 2021, the World Health Organization (WHO) urged healthcare professionals and institutions to adopt robust hand hygiene practices at the point of care. This point of care is defined as the intersection of three critical components: the patient, the healthcare personnel, and the care or treatment that necessitates interaction with the patient or their surroundings. Hand hygiene must be conducted whenever required to mitigate the spread of infectious microorganisms in healthcare settings effectively.[1]

Hand hygiene is an essential approach to curbing the dissemination of health-related infections. Introducing hand hygiene compliance systems represents a technological advancement focused on increasing adherence rates to hand hygiene protocols.

Healthcare-Associated Infections (HAIs) impose a substantial strain on patient health, leading to increased rates of morbidity, more prolonged hospital admissions, and rising costs of treatment. The hands of healthcare workers are the primary means through which HAIs are transmitted. A lack of compliance with hand hygiene practices is critical in the infections.[4]

Hospital Acquired Infections became a consistent challenge for the institution and for decreasing the length of hospital stay for clients. This study aims to evaluate the compliance rate with the suggested quality improvement strategy designed to improve hand hygiene practices, mainly through the scrub alert, and explicitly outline the factors contributing to the missed attempts. The objective of the study is to promote compliance with the quality improvement strategy designed to improve hand hygiene practices. The null hypothesis tested specifically as follows: There is a significant compliance rate on scrub alert throughout the three-months evaluation.

A qualitative study from Ahmadipour and his colleagues had shown that there are several barriers to hand hygiene practice that continues to be a challenge in terms of compliance, specifically these barriers are lack of knowledge of healthcare workers, improper attitude, wrong behavioral patterns, heavy workloads, lack of equipment, improperly designed wards and unsuitable training and planning. These factors result to decline in hand hygiene compliance.[13]

The Department of Health (DOH) have reaffirmed their dedication to promoting handwashing practices in schools and communities, alongside other health initiatives, to facilitate safe school reopening and mitigate disease transmission in public environments. To commemorate this commitment, DepEd and DOH, in partnership with UNICEF and WHO, jointly organized the 2021 Global Handwashing Day Symposium which showcased effective strategies for encouraging handwashing in schools, communities, and workplaces.[14]

The Plan-Do-Study-Act (PDSA) cycle was used to execute the proposed strategy because of its structure to test and evaluate ideas for change particularly in the healthcare setting. For Quality Improvement Projects (QIP), PDSA model is ideal because of its standard problem-solving methodology.

METHODOLOGY

This QIP was implemented at a designated tertiary facility in Quezon City, specifically the Lung Center of the Philippines, which has 236 beds. The Nursing Services are organized into the General Nursing Department and the Critical and Special Nursing Care Departments.

The QIP was executed using the PDSA model, an iterative, four-step strategy aimed at problem-solving and promoting process enhancement or organizational change. This framework is intended to assess the outcomes of changes that have been implemented. Following its structured steps, one can effectively analyze the task, measure the results, refine the methodology, and conduct further evaluations through additional testing.

A post-test design was used for this study to evaluate hand hygiene compliance in relation with the scrub alert. Limitations of this study includes non-inclusion of comparison before and after the implementation of the scrub alert since the cross evaluation and monitoring was done at one point in time during the implementation of the proposed scrub alert strategy. The researchers did not evaluate hand hygiene compliance prior the implementation of the scrub alert.

Participants of the Study

The QIP established its sample size through Cochran's formula, maintaining a confidence level of 95% and a precision level of 5%. The study was based on a population of 452, yielding 208 results. Moreover, the sample size for each area was determined by applying the strata formula, which involved dividing the calculated sample size by the population's product and the stratum's size.

The table presented details of the calculated sample population for each respective area.

Table 1. *Desired Sample Size for each Area*

AREA	DESIRED SAMPLE SIZE	AREA	DESIRED SAMPLE SIZE	AREA	DESIRED SAMPLE SIZE
MICU	12	FOB	1	PACU/SICU	9
PICU	6	RICU	21	OR	12
HD	8	WOUND CARE/ HYPERBARIC	1	AMOU	3
APOU	1	PHDD	4	WARD 2A	12
WARD 2B	17	WARD 3A	15	WARD 3B	10
WARD 3C	13	3D/PEDIA	11	WARD 4A	12
HOSPITAINER	12	STU	11	ER	17
OPD	4				

Legend: MICU= Medical Intensive Care Unit; PICU= Pediatric Intensive Care Unit; HD= Hemodialysis; APOU= Ambulatory Pediatric Oncology Unit; OPD= Out-Patient Department; PACU/SICU= Post-anesthesia Care Unit/Surgical Intensive Care Unit; OR= Operating Room; AMOU= Ambulatory Medical Oncology Unit; ER= Emergency Room

The researchers employed a probability sampling strategy to gather data from a defined target sample. Specifically, they utilized stratified sampling, a common technique in probability sampling for surveys. The targeted population was categorized into various groups or strata, with individuals in each stratum sharing relevant characteristics for the survey. This approach ensured that all population members were equally likely to be selected for inclusion in the sample.[6]

The study did not include the members of the Quality Improvement Team, who were focused on Scrub Alert, nor the PDSA consultant.

Instrument

A hand hygiene scrub alert tool has been developed, demonstrating a moderate agreement between raters using Cohen's K through inter-rater reliability testing (k=0.75[p=<0.05]). The adherence of participants to the scrub alert was assessed four times a day through a validated monitoring instrument, which systematically documented both compliance and instances of missed attempts.

Experts conducted a detailed evaluation of the self-constructed scrub alert tool to ensure clarity and precision. The PDSA adviser took the first step by reviewing the instrument to verify its relevance and applicability. Additionally, the PDSA group sought the insights of three experts to confirm the content of the hand hygiene scrub alert before it was applied for compliance monitoring.

Procedure

The researchers coordinated with the composer of the sound to be used as a scrub alert alarm. After obtaining the required approvals, the researchers coordinated with the communication section to facilitate the implementation of the scrub alert sound, which will be played four times daily throughout the hospital.

The researchers organized a detailed orientation for Supervisors, Head Nurses, and all members of the Nursing Service to introduce them to the proposed Scrub Alert initiative and ensure monitoring and evaluation of compliance.

Goal: Increase Engagement of Employees and Clients on Hand Hygiene Habit.
Strategies: 1. Prepare a Hand Hygiene Alert Announcement sound to be alarmed four times per day. 2. Coordinate with the communication section regarding the sounding of Scrub Alert 3. Inform Employees and clients for compliance during Scrub alert

Figure 1. *Strategies for Scrub Alert*

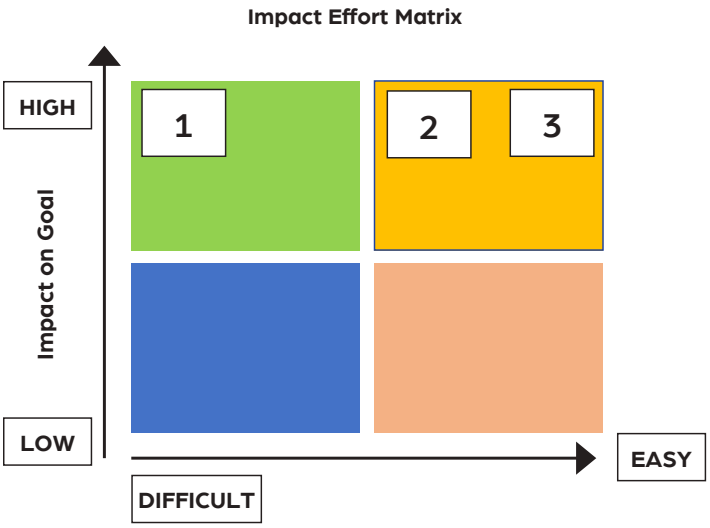

Figure 2. *Impact Effort Matrix for Scrub Alert*

The researchers opted to use an impact effort matrix to compare the relative impact and effort of each strategy and be able to prioritize actions relevant to the execution of the project. As per the evaluation of the researchers for each strategy the analysis presented in the Impact Effort Matrix revealed that strategies No. 2 and 3 yielded the most significant impact with manageable effort. These strategies entailed working with the communication section to play the "Scrub Alert" and enhance employee compliance during the designated times of the scrub alert alarm. While preparing the Hand Hygiene Habit "Scrub Alert" sound demanded effort to finalize a sound to be announced four times daily, this endeavor was realistic. It was projected to influence the achievement of the specified goal greatly.

The following step necessitated executing the devised plan. Before the implementation phase, it is imperative to complete the information campaign aimed at stakeholders, encompassing all nursing staff, department leaders, head nurses, the communication section, and unit clients. Gaining their support is vital, and this principle should be given significant attention. However, the enduring success of the change initiative relies on achieving compliance from all personnel regarding the "Scrub Alert" project.

The adherence of the selected participants to the scrub alert was subsequently assessed using Covert Participant Observation utilizing the validated Scrub Alert Monitoring Tool through cross-monitoring evaluation.

Statistical Treatment of Data and Data Analysis

The results of the study were presented using Frequency and Percentage as a statistical treatment. Data was displayed specifically in terms of percentages that exists for each data point.

Ethical Consideration

This QIP was approved by the QMS Department. In a series of lectures that laid the groundwork for the quality improvement initiative, the study's objectives, the nature of participant involvement, potential risks and benefits, data management procedures, and the contact details of the researchers were comprehensively conveyed. Strict measures were taken to ensure privacy and confidentiality, with the advantages significantly surpassing the associated risks. Moreover, no financial profits were detected, and no conflicts of interest were identified.

RESULTS

Scrub Alert Compliance

This data presentation outlines the proportion of the sample population that effectively utilized the scrub alert initiative.

Table 2. *Scrub Alert Compliance Rate (3-Month Period)*

AREA	MAY	JUNE	JULY	Average Total Compliance Rate
PHDD	100%	100%	100%	100%
Emergency Room	89.4%	100%	100%	95.5%
Operating Room	87.5%	100%	100%	95.8%
Ward 2A	88.4%	82%	100%	90.1%
Ward 2B	92.3%	100%	100%	97.4%
Ward 3A	58.6%	93%	95%	82.2%
Ward 3B	92.3%	100%	100%	97.4%
Ward 3C	95.1%	93%	90%	92.7%
Ward 3D/Pedia	96.1%	100%	100%	98.7%
Ward 4A	100%	100%	100%	100%
STU	100%	93%	85%	92.7%
Hospitainer	100%	100%	90%	96.7%
PICU	80.8%	100%	100%	93.6%
RICU	96.1%	100%	95%	97%
Hemodialysis Unit	96.1%	100%	100%	98.7%
MICU	100%	100%	100%	100%
SICU	71.1%	100%	100%	90.4%
OPD	100%	100%	100%	100%
APOU	86.7%	100%	100%	95.6%
AMOU	79.4%	100%	100%	93.1%

AREA	MAY	JUNE	JULY	Average Total Compliance Rate
Wound Care/Hyperbaric	100%	100%	100%	100%
MONTHLY COMPLIANCE RATE PER AREA	90.9%	98.1%	97.86%	95.62%

Legend: PHDD= Public Health Domiciliary Division; STU= Saint Therese Unit; PICU= Pediatric Intensive Care Unit; RICU= Respiratory Intensive Care Unit; MICU= Medical Intensive Care Unit; SICU= Surgical Intensive Care Unit; OPD= Out-Patient Department; APOU= Ambulatory Pediatric Oncology Unit; AMOU= Ambulatory Medical Oncology Unit

The Scrub Alert Quality Improvement Strategy was officially implemented on April 29, 2024, to reduce infection rates within the hospital by encouraging employees and clients to practice effective Hand Hygiene. Following the nurses' standard medication rounds, the Scrub Alert is designed to activate four times daily (8 AM, 12 PM, 4 PM, and 8 PM). Assessments and evaluations were conducted by the Scrub Alert Team alongside the Head Nurses to effectively oversee compliance, employing the Covert Participant Observation technique and a cross-monitoring strategy.

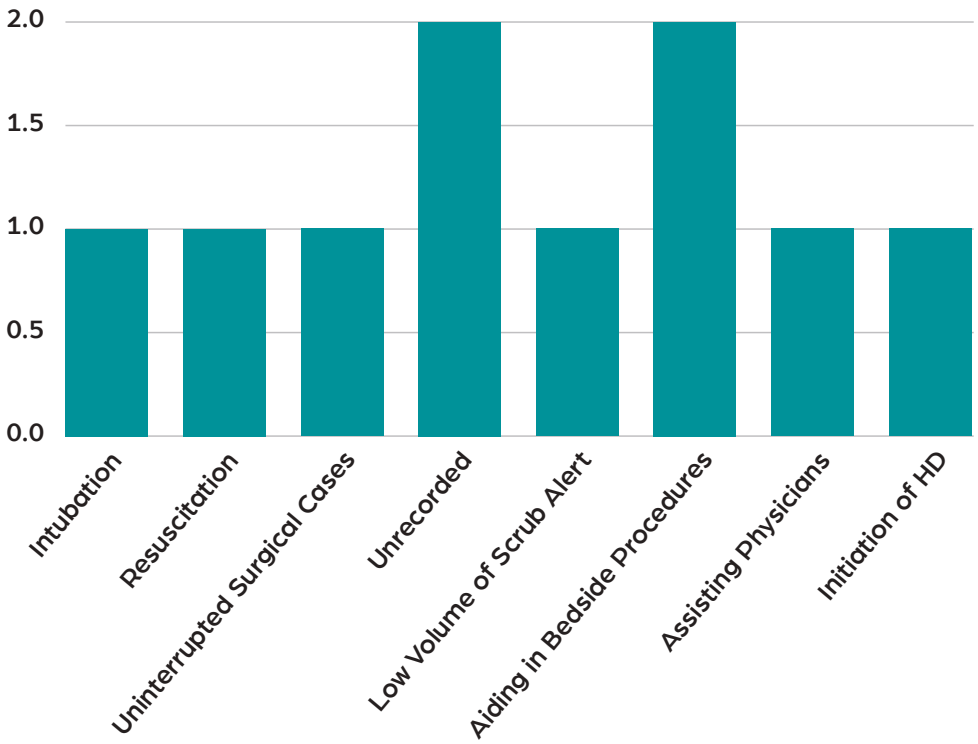

Figure 3. *Reasons for Non-Compliance per Area*

The subsequent data report details the compliance status for each area, addressing the time frame spanning from May to July 2024.

The reasons for non-compliance for each area were mostly unrecorded by staff aiding in bedside procedures.

The Emergency Room's compliance rate started at 89.4%, reflecting the demands of emergencies, particularly intubation and resuscitation. This rate then escalated to 100% in the subsequent two months. The Operating Room achieved an 87.5% initial compliance rate with failed attempts to comply with scrub alerts due to uninterrupted ongoing surgical cases. The compliance rate for Ward 3A began at 58.6%, attributed to a low volume of scrub alerts within the area.

Initially, Ward 3C achieved a compliance rate of 95.1%, with no available records explaining the missed compliance instances. This rate fell to 93% in the second month, finishing the evaluation period at 90%. The decline was linked to reduced scrub alerts and staff regular involvement in assisting physicians.

The St. Therese Unit (STU) initially achieved a compliance rate of 100%. However, this rate declined to 93% the following month due to emergency circumstances, including intubation, resuscitation, and bedside surgical interventions. By the end of the evaluation period, the STU recorded a compliance rate of 85%, with missed attempts attributed to emergencies involving patients. However, with Hospitainer, the 100% rate ultimately decreased to 90% due to occurrences of participants aiding in bedside surgical

procedures. The overall compliance of RICU with 95% rate attributed to missed opportunities arising from the need to assist physicians.

At the outset, the Hemodialysis Unit achieved a compliance rate of 96.1%, which reflected some missed attempts related to the initiation of hemodialysis procedures.

The Surgical Intensive Care Unit (SICU) commenced its assessment with a compliance rate of 71.1%, noting specific reasons for non-compliance related to assisting with extubations. This compliance rate improved to 100% during the second and third months.

The Nursing Service achieved a compliance rate of 90.9% for scrub alerts in the first month, which improved to 98.1% in the second month and concluded with a compliance rate of 97.86% in the final month of evaluation.

In summary, all sectors achieved an average compliance rate of 95.62% during the three-month covert participant observation and cross-monitoring evaluation for the Scrub Alert.

DISCUSSION

The Quality Improvement Project (QIP) evaluation indicated a total compliance rate of 95.62% over three months. A study from India conducted in 2021 demonstrated that their Quality Improvement (QI) project successfully raised hand hygiene compliance among healthcare providers by employing multiple interventions, including Plan-Do-Study-Act (PDSA) cycles, over eight months. The hand hygiene QIP in India recorded an increase in mean compliance from 27.2% to 57.1%, and there was no observed increased in the incidence of healthcare-associated infections (HCAI).7 This similar study has also shown an increase in compliance, therefore showing a strong foundation that this initiative can also break grounds in decreasing Hospital Acquired Infections (HAIs).

Effective hand hygiene (HH) is the most economical and straightforward approach to preventing healthcare-associated infections (HAIs), yet it must be more frequently noticed. The World Health Organization (WHO) has established and advocated for a standardized guideline for HH practices. The WHO and the Centers for Disease Control and Prevention (CDC) advise using soap and water for hand washing when hands are soiled. In other circumstances, an alcohol-based hand rub serves as a suitable alternative. The quality improvement (QI) methodology has been extensively adopted in numerous countries to enhance fundamental and advanced healthcare systems, employing the plan-do-study-act (PDSA) framework.[8]

On the other hand, Global research has consistently demonstrated inadequate compliance with essential practices, including hand hygiene (HH), while highlighting significant improvements resulting from uncomplicated interventions such as training and direct observation. According to Anwar and his group, the overall compliance with HH rose markedly from 30.9% (95% confidence interval (CI): 27.2–34.6%) before the intervention to 69.5% (95% CI: 65.2–72.6%) following it. Notably, nurses achieved the highest compliance rates compared to physicians and other healthcare workers (p = 0.001).9 The investigation led by Kumar and his associates revealed that hand hygiene compliance rose from 40.6% to 69.8% when analyzing data before and after the intervention. Similar to other research findings, the most significant hand hygiene compliance was recorded among nurses. This observation may be explained by the fixed placement of nursing staff in intensive care units, in contrast to the more variable assignments of other staff members, such as doctors.[8]

A study that was done in Kenya showed that the compliance rate with hand hygiene rose from 27% at the initial assessment to 44% following 21 months of observation. There was a significant association between the indication or moment for hand hygiene and the level of compliance achieved. Training and mentorship focused on the critical nature of hand hygiene (HH) in all situations is necessary to boost overall compliance with HH standards. Utilizing Continuous Quality Improvement (CQI) methods, which include regular monitoring and feedback regarding HH performance, can be a productive means of enhancing HH compliance in public hospitals throughout Kenya.[10]

Given the results presented in this study, the highest compliance rate is for PHDD, Ward 4A, MICU, OPD, and Hyperbaric and Wound Care Unit. Compared with other studies, compliance rates are notably higher in the ICU and Hemodialysis departments than in the Internal Medicine department. However, the literature presents mixed results concerning hand hygiene compliance in the ICU. Some studies have found that compliance is lower in the ICU compared to other departments, which may be due to the elevated number of hand hygiene opportunities available for patients in a severely ill state. The combination of these factors, along with insufficient staffing, prioritizes patients' needs over hand hygiene (HH). Nevertheless, other research has indicated that increased compliance can be linked to the staff's greater self-awareness regarding the necessity of adhering to HH protocols, particularly given the critical condition of ICU patients. Likewise, the emergency departments and the outpatient departments, characterized by high patient volumes at any given time and regular interactions between healthcare workers and patients, exhibited a relatively greater degree of compliance than the internal medicine department, which is consistent with findings reported by others. The cyclical characteristics of the program may have influenced the enhancement in compliance over time.[10]

There are nnumerous studies that have indicated the potential advantages of various strategies to enhance

hand hygiene (HH) compliance. However, most of these investigations have predominantly utilized conventional methods, either independently or in conjunction, such as educational initiatives, training sessions, audits with feedback, incentives, or the deployment of new devices. These interventions are grounded in a conventional understanding of human rationality, which posits that behavioral change necessitates the provision of new information to modify beliefs (for instance, through education or training), the adjustment of relevant incentives (including rewards and penalties), the facilitation of planning, or the alleviation of potential disruptive factors (such as stress or fatigue) through technological improvements. While these traditional interventions can be effective, they are often expensive and relatively challenging to implement. Only a few studies have explored the effectiveness of less intensive interventions that leverage specific behavioral insights to encourage proper hand hygiene practices.[11] The scrub alert system employed in the study can be a great strategy in promoting hand hygiene compliance as this is not relatively challenging to implement.

The effectiveness of nudges raises a notable challenge regarding their long-term viability. A behavioral intervention that is deemed successful may not be practically beneficial for at least two significant reasons: (i) a decline in effectiveness after the intervention is halted and (ii) a reduction in impact while the intervention is still active. The approaches that have been validated in this study also show a high degree of sustainability over time, which must align with a long-term plan that can be realistically carried out under the supervision of an infection control unit in many healthcare facilities. Moreover, the increase in hand hygiene compliance must remain broadly stable.[11] Similar with the scrub alert that is being promoted in this study, a long-term plan is also needed and must be carried out under strict supervision of infection control unit.

A variety of challenges to proper hand hygiene have been documented. Healthcare workers have indicated several factors contributing to their failure to adhere to recommended practices, such as skin irritation, lack of access to supplies, disruption of interactions with patients, prioritization of patient needs, the wearing of gloves, forgetfulness, unawareness of guidelines, time constraints, heavy workloads, insufficient staffing, and a lack of scientific data demonstrating the positive effects of improved hand hygiene on infection rates within hospitals.[12] As compared with the results gathered from the Quality Improvement Project on Hand Hygiene: Scrub Alert, contributing factors to non-compliance to hand hygiene mainly contribute to emergencies in the area.

According to WHO, adherence to optimal hand hygiene practices is approximately 9% when providing care for critically ill patients in low-income nations. Hand hygiene compliance rates in high-income countries seldom surpass 70%, indicating a need for enhanced efforts to improve practices globally. In a global context, it is observed that among every 100 patients, 7 individuals in developed nations and 15 individuals in developing nations will contract at least one healthcare-associated infection (HAI) while receiving care in acute care hospitals.[15] The typical adherence rate to the recommended hand hygiene techniques among healthcare professionals was recorded at 78%, falling short of the established benchmark of 90% for critical care settings. Direct observation remains the most effective method, as it can assess compliance with all five moments of hand hygiene.[16] The hand hygiene compliance rate of the institution coinciding with the implementation of "scrub alert" concluded at 97.86% on the last month.

The findings of this Quality Improvement Project (QIP) have demonstrated a significant compliance rate compared to numerous studies that have been reviewed. Furthermore, maintaining consistency is essential for successfully reducing Hospital-Acquired Infections.

CONCLUSION AND RECOMMENDATION

The assessment of the Quality Improvement Project indicates that participants involved in the QIP evaluation across various areas achieved a scrub alert compliance rate ranging from an Average Total Compliance Rate of 82.2% to 100%. Notably, most areas involved demonstrated full compliance at 100% throughout the three-month evaluation period. The reasons for the failure to comply primarily stem from acceptable instances of emergencies, including intubations, resuscitations, and bedside surgical procedures. Additionally, technical issues related to the low volume of scrub alerts and other nursing interventions and assistance provided to physicians contributed to the non-compliance with the Scrub Alert strategy. The importance of consistency cannot be overstated when it comes to the advancement and successful execution of this strategy.

Furthermore, it is recommended that proposals be evaluated to investigate the hospital-acquired infection rate and the association between scrub alert compliance rates and the occurrence of such infections. One aspect of the recommendation is to establish the Scrub Alert as a permanent fixture in routine procedures, to be activated following the standard medication timings observed by nursing staff. Moreover, it is advisable to conduct additional studies to strengthen the proposed Scrub Alert Strategy, aiming to lower the incidence of Hospital Acquired Infections further. Future quality improvement studies regarding hand hygiene compliance should prioritize administrative and infrastructural factors, such as the availability of hand washing stations in each area.

AUTHORSHIP

All authors have validated that they fulfill the authorship requirements mandated for scientific proceedings.

DISCLOSURE OF CONFLICT OF INTEREST

The authors declare no conflicts of interest related to the findings presented in this study.

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LUNG CENTER OF THE PHILIPPINES

PULMONARY REHABILITATION

WARM-UP & COOL DOWN

BREATHING EXERCISES

CARDIOPULMONARY EXERCISES

The Lung Center of the Philippines Section of Pulmonary Rehabilitation offers structured and monitored exercise training that improves muscle function to decrease shortness of breath; education on maintaining and improving body function; emotional and psychological support, and instructions on breathing techniques to lessen breathing problems. Duration of program is 4 weeks, every Tuesday and Thursday 9AM - 11AM via virtual platform.

Materials for Virtual Sessions

Digital Platforms Requirements
- -Zoom Account
- -Viber Account

For the Virtual Session
- -Pedometer
- -Pulse Oximeter
- -Digital Blood Pressure Apparatus
- -Cycle Pedometer
- -Incentive Spirometer (*optional)
- -Cycle Ergometer (*optional)

CONDITIONS RECOMMENDED FOR THE PROGRAM

- CHRONIC OBRSTRUCTIVE PULMONARY DISEASE
- BRONCHIECTASIS
- POST COVID-19
- INTERSTITIAL LUNG DISEASE
- PERIOPERATIVE REHAB
- OTHER CHRONIC LUNG DISEASE

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@lcpcopdsupportgroup
Pulmonary Rehabilitation

PUBLIC HEALTH AND DOMICILIARY DIVISION

This is a program that caters to adult afflicted with TB since early 2000 and children with TB in 2007. The Lung Center of the Philippines DOTS clinic is the first public health facility engaged implementing Programmatic Management for Drug resistant TB in 2005 as a satellite treatment center under the Green Light Committee. In 2008, it became one of the ten (10) treatment centers implementing the DOH guidelines on PMDT as issued by DOH Administrative Order 2008-0018.

SERVICES OFFERED

- CONTACT TRACING

- DSTB/DRTB SCREENING (GENEXPERT)

- HIV COUNSELING AND TESTING FOR ENROLLED TB PATIENTS (15 YEARS OLD AND ABOVE)

- PROVISION OF ANTI TB MEDICATIONS (DSTB/DRTB) FOR ADULT AND CHILDREN FOR FREE

- DIRECT SPUTUM SMEAR MICROSCOPY TEST FOR ENROLLED PATIENTS

OTHER SERVICES PROVIDED

- CONDUCTS TB EDUCATION
- REFERRING AND PROVIDING CENTER FOR PRESUMPTIVE DSTB/DRTB PATIENTS
- ACT AS TREATMENT PARTNER
- FOLLOW UP CASES WHO FAILED TO REPORT FOR TREATMENT
- SUBMITS ACCOMPLISHMENT REPORTS TO LCP/NTP/QCHD

OUR OBJECTIVES

TB-FREE PHILIPPINES

ENSURE THAT TB DOTS SERVICES ARE AVAILABLE, ACCESSIBLE, AND AFFORDABLE IN COLLABORATION WITH THE LGUS AND OTHER PARTNERS.

TO REDUCE PREVALENCE AND MORTALITY FROM TB.

CONTACT INFORMATION AND SCHEDULE

SCHEDULE:
MONDAY TO FRIDAY, 8AM-5PM

CONTACT US AT:
8924-6101 LOC 1856-57

EMAIL US AT:
PHDD@lcp.gov.ph

LUNG CENTER OF THE PHILIPPINES
NATIONAL REFERENCE LABORATORY FOR CLINICAL CHEMISTRY

ADENOSINE DEAMINASE (ADA)

Is a protein that is produced by cells throughout the body and is associated with the activation of lymphocytes, a type of white blood cell that plays a role in the immune response to infections. Conditions that trigger the immune system, such as an infection by Mycobacterium tuberculosis, the bacteria that causes tuberculosis (TB), may cause increased amounts of ADA to be produced in the areas where the bacteria are present. This test measures the amount of adenosine deaminase present in pleural fluid in order to help diagnose a tuberculosis infection of the pleurae.

1 WHY GET TESTED?

ADA tests helps to detect or rule out Mycobacterium Tuberculosis infection in Pleural Fluid. This may also be detected in other body fluids such as Cerebrospinal Fluid (CSF).

2 WHEN TO GET TESTED?

- Upon doctor's request
- Consult your Attending Physician before the tests. Your doctor may guide you for further instructions specifically if a particular medication might need to stop.

3 SAMPLE COLLECTION

Required sample: **PLEURAL FLUID**
A volume of Pleural Fluid is collected by a Physician using a procedure called THORACENTESIS and placed on a sterile container. This shall be sent to the laboratory as soon as possible without delay.

Volume: At least 5-10 mL in sterile container
Sample Handling: Room temperature
Sample Processing: Freshly collected or frozen sample (4 or -20°C)

LABORATORY GUIDELINES

Sample Preparation / Receiving of Samples:
1. Freshly collected samples: must be sent to the laboratory within 2 hours at room temperature
2. For send in referrals: call the LCP Patient Laboratory Service (02-89246101 loc. 1196) for more details
   : specimen preferably frozen or kept at controlled temperature 4 or -20°C

Time of collection is indicated on the request form

Processing Day: Mondays, Wednesdays and Fridays
Cut off Time: 10:00AM
Releasing of result: Same day, 4:00PM

Price: Php 2,700.00

For more information, please contact us:
NATIONAL REFERENCE LABORATORY FOR CLINICAL CHEMISTRY
Quezon Avenue, Quezon City
89246101 local 4041-4043 nrl@lcp.gov.ph

LUNG CENTER OF THE PHILIPPINES
Scientific Proceedings

ORIGINAL ARTICLE

EVALUATION OF BUNDLES OF CARE FOR FALL: A QUALITY IMPROVEMENT PROJECT (6P'S)

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ABSTRACT

Background and Objectives. The Bundles of Care for Fall represent a measure of good practice, which are recommended for all patients, most especially older and more vulnerable patients, that are admitted in the hospital. The objective of this QIP is to assess the performance of nursing staff in the implementation of Bundles of Care with the addition of 6P's (Pain, Position, Potty, Pump, Possession, Prevention).

Methodology. The Quality Improvement Project (QIP) of Bundles of Care for Fall was conducted in Lung Center of the Philippines from May to July 2024. The Plan-Do-Study-Act (PDSA) framework was adopted.

Results. A total of 380 nursing staff were included. Cross-monitoring and spot checking were the strategies implemented. Consistently more than 80% of included nursing staff were assessed as satisfactory to exceptional in all assessment points for all the 3 months of observation. A small but noteworthy percentage of nurses, 5-19% were assessed as "needs improvement and not done" for some categories during the month of June. There is corresponding decrease in the percentage with "needs improvement and not done" assessment in some categories in July.

Conclusion. This Quality Improvement Project showed satisfactory to exceptional performance of the nursing staff in the implementation of Bundles of Care for Fall including the 6P's. Cross-monitoring spot checking and focused intervention may play a role in monitoring and evaluation and eventually in the achievement of desired outcome which is to prevent fall.

Keywords. Fall, prevention, patient safety, bundles of care, 6P's

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INTRODUCTION

Falls have become a concern for older individuals as well as hospitalized patients, with statistics showing that 30% of people aged 65 and above experience at least one fall annually.[1] As the Agency for Healthcare Research and Quality estimates that around 700,000 to 1 million patients fall each year, hospitals worldwide have implemented certain predictive preventive measures to address this.[2] These are the STRATIFY model and the Bundle of Care for Fall approach. The STRATIFY model is based on the patient's overall history, while the Bundle of Care for Fall is a set of strategies that staff have to remember in order to decrease the incidence of falling.[3,4] To illustrate the use of these interventions, the Cleveland Clinic's Medina Hospital had a decrease in fall incidences through the use of multiple intervention protocols by educating the staff and constantly utilizing these methods.[5]

At the Lung Center of the Philippines, fall prevention is one of the considerations of patient safety, however there are significant gaps in this aspect. Since January 2024, there have been three recorded fall incidents, no specific hospital policy in place, and no documented quality improvement initiatives. In the Lung Center of the Philippines, fall prevention as one of the considerations of patient safety in the institution shall be given a highlight of importance. The addition of 6P's (Pain, Position, Potty, Pump, Possession, Prevention) as part of the Bundles of Care for Fall is important as it will strengthen the strategies in avoiding occurrences of fall.

To address this gap in the current bundle of fall care, this Quality Improvement Project (QIP) shall facilitate the assessment of nursing staff's compliance in implementing the Bundles of Care for Fall, including the 6P's.

METHODOLOGY

The QIP took place at a designated tertiary hospital located in Quezon City, specifically the Lung Center of the Philippines, which has a capacity of 236 beds. The Nursing Services are comprised of the General and Critical Care, and Special Nursing Care Departments. Critical care nurses within the CSNCD are dedicated to delivering exceptional patient care, maintaining a nurse-to-patient ratio of 1:3.

The QIP was carried out using PDSA (Plan-Do-Study-Act). An iterative, four-tiered methodology employed for resolving issues and advancing process improvement or organizational change. The PDSA framework is designed to evaluate the impact of changes that have been executed. [6] By adhering to its four sequential steps, one can effectively dissect the task, assess the results, refine the approach, and re-evaluate through further testing.

Participants of the Study

Total Elimination was utilized in which 380 nursing staff who were directly involved in patient cares were included in the study. The members of the Quality Improvement Team specific for Bundles of Care for Fall and the PDSA consultant were excluded from the study.

Instrument

A Fall Bundle Competency Assessment Form has been devised showing a reliability score that span from .713 to .930 across each segment, which will be employed as the means for data collection. The measurement of the utilization of 6P's as part of the Bundles of Care for Fall was conducted using a 4-Point Likert Scale, which spans from 0 (Not Done) to 3 (Exceptional).

The 6P's as part of the Bundles of Care for Fall was specifically indicated under the performance criteria presented in a scaling format.

To ensure clarity and accuracy, experts thoroughly examined the self-made competency form. The PDSA adviser took the initial step of reviewing the form to ascertain their relevance and applicability. Additionally, the PDSA group sought the expertise of three experts to validate the content of the competency form before distributing them to the target respondents.

Procedure

The strategies for utilization of 6P's (Pain, Position, Potty, Pump, Possession, Prevention) involves (1) preparation of 6P's as part of the Bundles of Care for Fall. (2) Conduct comprehensive orientation programs for Supervisors and Head Nurses, acquainting them with the proposed Bundles of Care for Fall, and subsequently (3) ensure that this information is cascaded down to all nursing staff then (4) monitor and evaluate compliance.

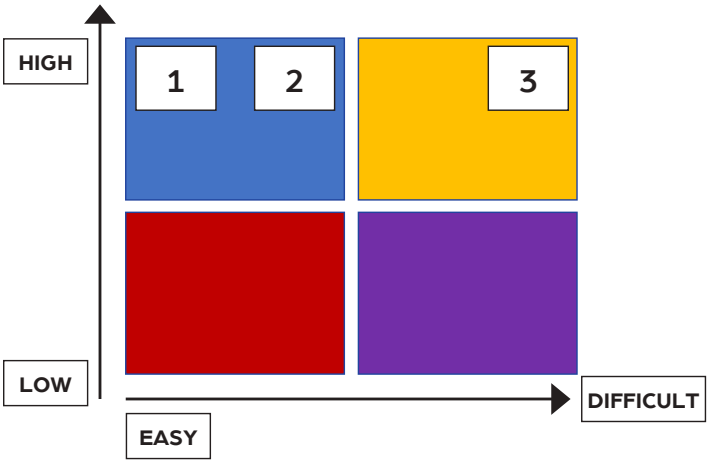

Figure 1. *Impact Effort Matrix for Bundles of Care: Quality Improvement Project*

Strategies No. 1 and 2 stood out in the Impact Effort Matrix as having the highest impact on actions that were relatively easy to accomplish which is to devise a Bundles of Care for Fall and Orient the concept to supervisors cascading down to all nursing staff. The monitoring and evaluation of compliance can yield substantial results, yet it may pose challenges in execution.

Implementing the plan was the next step. Before moving forward, the stakeholders were the primary target of the information campaign. (All Nursing Personnel, All Department Heads, All Head Nurses and Supervisors) Recognizing the importance of buy-in is vital. Yet, the success of change efforts hinges on gaining the buy-in of all personnel involved in the project; the intervention will be adjusted to incorporate their suggestions.

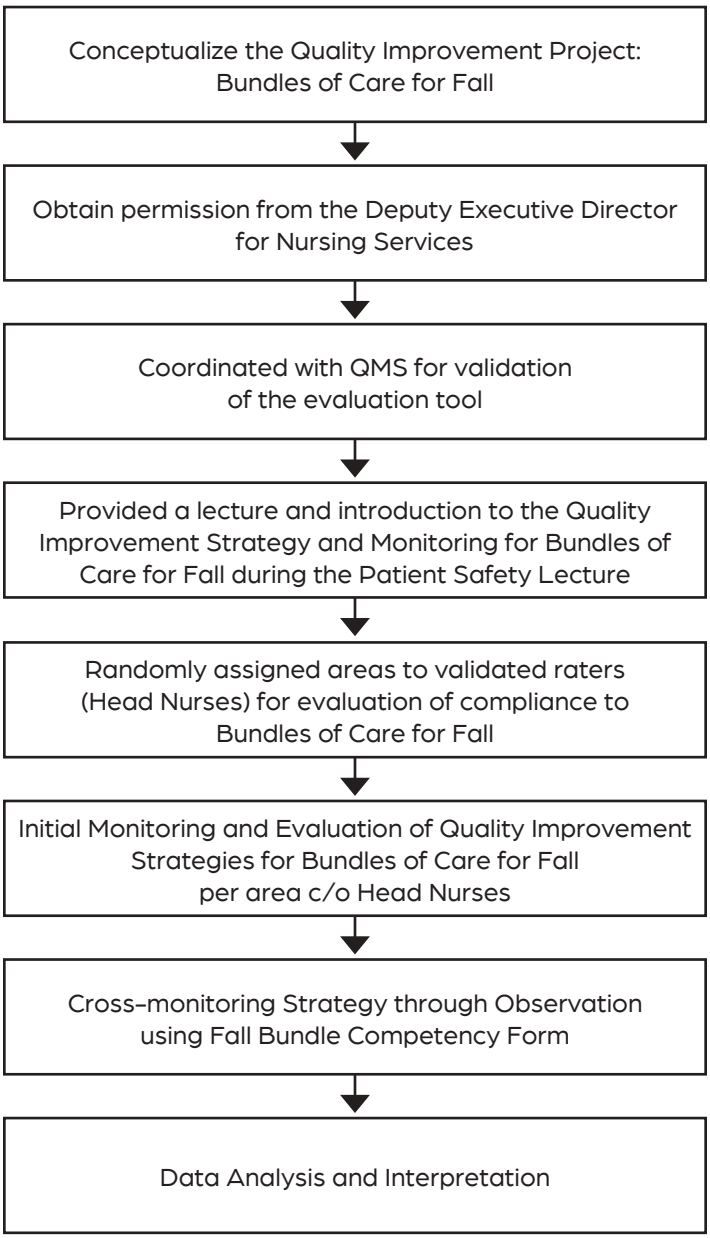

Figure 2. *Process Flow for the Implementation of Bundles of Care for Fall*

The flowchart presented in Figure 2 outlines the methodology employed during the execution and assessment of the Quality Improvement Project. Initially, the Bundles of Care for Fall were developed as part of the Planning phase within the PDSA cycle. Following this, the Do Phase of the PDSA emphasizes the importance of adhering to Ethical Standards, which necessitated obtaining the appropriate permissions. On the month of April, during the Patient Safety lecture, Bundles of Care for fall were discussed and at the same demonstrated with the inclusion of 6P's. The evaluation tool was subjected to a validation process and subsequently received approval from the Quality Management System (QMS). The monitoring and evaluation phase entailed the random assignment of areas to each validated rater, thereby enabling a cross-monitoring approach over a three-month duration, which concluded with data analysis and interpretation, representing the Study Phase of the PDSA cycle. Finally, the Act Phase encompasses the execution of the proposed Quality Improvement project as an integral part of the documented quality improvement initiative within the Nursing Service.

Monitoring of compliance with the Bundles of Care for Fall, which includes the 6P's, was conducted through observation using the Fall Bundle Competency Form. On the first month, it was monitored per area handled by the head nurses. However, during the second and third month, it was done through a cross-monitoring strategy to avoid bias. Spot checks were conducted to assess and evaluate the nursing staff's adherence to the 6P's and Bundles of Care for Fall, ensuring transparency in compliance. Head Nurses were assigned to evaluate compliance in a randomly selected area. The level of agreement among the head nurses, assessed through Fleiss Kappa, indicated an excellent consensus, with a Kappa value of 0.76.

Statistical Treatment of Data and Data Analysis

In order to meet the study's objectives, the researchers employed descriptive statistics to summarize the data collected. The results were showcased through frequencies and percentages. For this investigation, a total enumeration sampling technique was used, which allowed for the inclusion of every individual in the target population, ensuring complete representation and coverage.

Ethical Consideration

This Quality Improvement Project was approved for implementation by the DED Nursing, who also provided ethical oversight. All interactions with patients and ward nurses were part of the standard of care and routine assessment of the said quality improvement project: Bundles of Care for Fall. No identifiable data from the patients or nurses were extracted and recorded in the assessment forms.

RESULTS

Introduction to Fall Agreement Form

This data presentation outlines the proportion of nursing staff that effectively utilized the introduction to fall agreement form in their interactions with the companions and family members of their clients.

Table 1. *Percentage of Nursing Staff utilizing introduction to Fall Agreement Form*

Performance Scale	MAY	JUNE	JULY
Exceptional	34.5%	24.4%	28%
Perform Well/ Satisfactory	55%	52.6%	46%
Needs Improvement/ Training	-	10%	7%
Not Done	-	13%	2%
Not Applicable	10.5%	-	17%
TOTAL	100%	100%	100%

From May to July, the fall agreement form received the highest percentage of "satisfactory" responses across all feedback categories. However, the response rate decreased from 55% to 52.6% in June and 46% in July, indicating a greater level of compliance in this category by the third month of the Quality Improvement Project evaluation.

Reassessment of Fall Risk

The Reassessment of Fall Risk involves the completion of Fall Risk Agreement Form and updating of Fall Risk tags.

Table 2. *Percentage of Nursing Staff performing the completion of Fall Risk Agreement Form*

Performance Scale	MAY	JUNE	JULY
Exceptional	27%	30.2%	32%
Perform Well/ Satisfactory	64.3%	52.6%	50%
Needs Improvement/ Training	7.5%	8.2%	4%
Not Done	1.2%	9.1%	1%
Not Applicable	-	-	13%
TOTAL	100%	100%	100%

The fall risk agreement form was successfully executed, with completion rates increasing from 27% to 32%. However, satisfaction ratings declined from 64.3% in May to 50% in July. The "need improvement" category fell from 8.2% to 4%, and the "not done" category decreased from 9.1% to 1%.

Table 3. *Percentage of Nursing Staff updating the Fall Risk Tags*

Performance Scale	MAY	JUNE	JULY
Exceptional	28.6%	25%	33%
Perform Well/ Satisfactory	63%	50.9%	58%
Needs Improvement/ Training		19.3%	2%
Not Done	8.4%	4.8%	-
Not Applicable		-	7%
TOTAL	100%	100%	100%

The proportion of nursing staff updating fall risk tags has increased in the "exceptional" category, reaching 33% by the final assessment month. However, the "Satisfactory" rating declined, the "Needs Improvement" category decreased, and the "not done" category decreased.

Provision of Alarm Bands

The use of fall armbands provides a visual reminder for staff and patients regarding the potential risk of falls, contributing to enhanced safety measures.[6]

Table 4. *Percentage of Nursing Staff providing Fall Alarm Bands*

Performance Scale	MAY	JUNE	JULY
Exceptional	29.2%	26.6%	33%
Perform Well/ Satisfactory	59%	53.3%	57%
Needs Improvement/ Training	10.9%	17%	2%
Not Done	0.9%	3.1%	1%
Not Applicable	-	-	8%
TOTAL	100%	100%	100%

The nursing staff demonstrated exceptional performance in providing alarm bands, with a 33% rating. However, the "needs improvement" percentage declined from 17% to 2%, and the failure to update alarm bands decreased from 3% to 1%.

Ensure Functionality of Call Light

The presented information details the approaches taken by the nursing staff to ensure that call lights remain functional, thereby serving as an essential safety measure in the prevention of falls in the hospital.

Table 5. *Evaluation of Call Light Functionality*

Performance Scale	MAY	JUNE	JULY
Exceptional	31.7%	26.5%	37%
Perform Well/ Satisfactory	47.8%	65.7%	49%
Needs Improvement/ Training	18.3%	3.9%	3%
Not Done	2.2%	3.9%	2%
Not Applicable	-	-	9%
TOTAL	100%	100%	100%

The nursing staff scored 37% for "exceptional" performance in evaluating call light functionality, a 37% improvement from 31.7% in May. Satisfactory ratings decreased from 65.7% to 49%. The "needs improvement" category fell from 18.3% to 3% in July, while the "not done" category showed minimal change.

Table 6. *Instruction on proper use of call light to patient and companion*

Performance Scale	MAY	JUNE	JULY
Exceptional	31.1%	25.7%	35%
Perform Well/ Satisfactory	52.5%	65.2%	51%
Needs Improvement/ Training	14%	5.7%	4%
Not Done	2.4%	3.5%	2%
Not Applicable	-	-	8%
TOTAL	100%	100%	100%

The nursing team demonstrated exceptional proficiency in guiding patients on call light usage, with a 35% success rate in July, a significant improvement from June's 25.7%. However, 4% of evaluations were deemed "need improvement."

Utilization of 6P's

The subsequent data reveals the trend in which the 6P's were employed as a safety measure to lower the incidence of falls.

Table 7. *Pain: Ask about pain and reassess if previously medicated?*

Performance Scale	MAY	JUNE	JULY
Exceptional	31.4%	23.4%	33%
Perform Well/ Satisfactory	66.5%	61.5%	54%
Needs Improvement/ Training	-	8.4%	3%
Not Done	2.1%	6.7%	-
Not Applicable	-	-	10%
TOTAL	100%	100%	100%

The nursing staff rated pain as a fall prevention strategy as exceptional, with initial percentages of 31.4% and 23.4%. However, satisfaction declined from 66.5% to 54%, and "needs improvement" decreased from 8.4% to 3%.

Table 8. *Position: Is the patient in a comfortable position?*

Performance Scale	MAY	JUNE	JULY
Exceptional	29.8%	30.5%	40%
Perform Well/ Satisfactory	68.3%	63.8%	58%
Needs Improvement/ Training	-	5.3%	2%
Not Done	1.9%	0.4%	<1%
Not Applicable	-	-	-
TOTAL	100%	100%	100%

The nursing team achieved an "Exceptional" rating for patient comfort assessment, increasing scores from 29.8% to 40%. However, the "Satisfactory" criteria declined, and the "Needs Improvement" category decreased. Instances of strategy non-application decreased.

Table 9. *Potty: does the patient need to go to the bathroom?*

Performance Scale	MAY	JUNE	JULY
Exceptional	31.4%	21.5%	32%
Perform Well/ Satisfactory	64.6%	64%	51%
Needs Improvement/ Training	-	12.1%	4%
Not Done	4%	2.4%	1%
Not Applicable	-	-	12%
TOTAL	100%	100%	100%

The nursing staff assessed the patient's bathroom access needs using the 6P's: Potty, with a commendable rate of 31.4% in May, a decrease to 21.5% in June, and a notable increase to 32% in July.

Table 10. *Pump: are pumps and their cords in the proper place?*

Performance Scale	MAY	JUNE	JULY
Exceptional	29.5%	30.9%	47%
Perform Well/ Satisfactory	69.3%	54.1%	50%
Needs Improvement/ Training	-	13.4%	3%
Not Done	1.2%	1.6%	<1%
Not Applicable	-	-	-
TOTAL	100%	100%	100%

The nursing staff's adherence to pump and cord positioning showed an upward trend in the "Exceptional" execution of the strategy, increasing from 29.5% in May to 47% in July. However, the "Satisfactory" category decreased from 69.3% to 50%, and the "Needs Improvement" category decreased.

Table 11. *Possessions: does the patient have everything he/she needs within reach?*

Performance Scale	MAY	JUNE	JULY
Exceptional	30.4%	23%	33%
Perform Well/ Satisfactory	67.4%	72.5%	58%
Needs Improvement/ Training	-	3.7%	4%
Not Done	2.2%	0.8%	1%
Not Applicable	-	-	5%
TOTAL	100%	100%	100%

By the second month, possessions had dropped from 30.4% to 23%, according to the nursing staff. Although the "satisfactory" rating rose from 67.4% to 72.5%, it still needs to be improved. The strategy's staff implementation dropped from 2.2% to 0.8%, with 5% being labeled as "not applicable."

Table 12. *Prevention: are bed alarms engaged? Anti-slip mats in place?*

Performance Scale	MAY	JUNE	JULY
Exceptional	28.3%	17.3%	27%
Perform Well/ Satisfactory	63.7%	49.8%	47%
Needs Improvement/ Training	-	19.9%	3%
Not Done	8%	13%	16%
Not Applicable	-	-	7%
TOTAL	100%	100%	100%

The nursing staff successfully implemented the Prevention strategy under the 6P's framework, with compliance dropping from 28.3% to 27%. Their performance was satisfactory, but there was a need for improvement. Adherence to bed alarm monitoring and anti-slip mat provision was low, with 7% under the "not applicable" criteria.

DISCUSSION

The data obtained revealed a decrease in the trend of compliance associated with the introduction of the Fall Agreement Form. Establishing a fall risk agreement is imperative for ensuring the safety of patients, particularly in healthcare settings such as hospitals and nursing homes. This agreement articulates the strategies to avert falls and defines the expectations for both patients and healthcare staff.

A quality improvement initiative was conducted at Jacksonville University, employing a fall agreement form as a method to mitigate the occurrence of falls. Nevertheless, the project did not yield a significant reduction in fall rates during its execution. Furthermore, relying solely on one strategy is insufficient to achieve the goal of lowering fall rates. The adherence of nursing staff to this initiative remains a critical factor.[7] As compared with the Quality Improvement Project in Lung Center of the Philippines; the nursing staff shown an acceptable compliance with all the strategies presented.

Furthermore, the constraints on individual scoring by each evaluator may differ, as no explicit guidelines regarding the criteria were included in the assessment form. However, each criterion was comprehensively reviewed during a meeting of head nurses before the commencement of cross-monitoring. Additionally, Fleiss' kappa was employed among all evaluators to ensure consistent agreement in categorical ratings.

The 6P's integration into the Bundles of Care for Fall has established a consistent framework, promoting adherence among nursing staff, patients' families, and companions, thereby ensuring patient safety and fall prevention.

The causes of falls in older adults are varied and encompass multiple dimensions, including predictive factors associated with the aging process, various health issues, the implications of pharmacy, and situational factors such as the individual's health condition, context, and the activities they are performing. While these prospective elements are crucial for long-term fall risk evaluations, they do not reflect the immediate situation being faced.[8]

The nursing services successfully implemented the Fall Agreement Form, despite a declining trend in its introduction. They also conducted a reassessment of fall risk, highlighting the importance of continuous educational initiatives and competency evaluations. They maintain high standards by consistently updating fall risk assessment instruments and incorporating the latest evidence-based methodologies.

The presence of distinct and visible fall risk indicators is essential in notifying all healthcare providers, enabling them to adopt the required safety measures. Regular updates to patients' fall risk tags are vital for conveying risk levels to all healthcare professionals, which plays a significant role in fall prevention.[6]

It is prudent to establish reminders or alerts in the health records to facilitate regular updates of fall risk tags by staff. Moreover, sustaining high performance levels in this area necessitates ongoing compliance monitoring and the provision of feedback to staff.

The strategy for context-aware fall prevention through the use of wearable alarm bands should incorporate both prospective and ongoing assessments of fall risk, establishing a continuous and context-sensitive approach. The main goal is to provide feedback regarding the immediate risk of falling. Such feedback should be aimed at all individuals with caregiving responsibilities, whether formal or informal, and should be customized according to the specific context in which the individual is situated.8 The nursing staff showcased an exemplary level of performance in the distribution of alarm bands.

Additionally, with respect to the operational efficiency of call lights, it is imperative to acknowledge that adequate illumination is a significant environmental factor in reducing fall occurrences, particularly for older adults who may have diminished visual capabilities. Studies have demonstrated that poor lighting substantially raises the risk of falls.9

Staff should be trained on the critical role that appropriate lighting plays in fall prevention strategies. Furthermore, it is important to incorporate routine inspections into daily operations and to maintain high standards by ensuring that any environmental changes, such as renovations or equipment upgrades, continue to prioritize effective lighting solutions. Comprehensive guidance on the operation of call lights is vital for ensuring that patients can articulate their needs efficiently, which in turn helps to decrease the risk of falls.[6]

Regular evaluations of patient rooms should include call light accessibility assessment, educating staff about its role in fall risk mitigation, and promoting adherence to this measure during daily rounds and patient care protocols.

Moreover, as part of the 6P's, consistent evaluation and management of Pain are essential in mitigating the risk of falls, as unaddressed pain may result in instability and a heightened likelihood of falling. Effectively addressing pain during rounding is fundamental to preventing falls, as it has a direct correlation with a patient's mobility and overall safety.[6]

Further, the careful management of patient comfort and optimal positioning is essential in lowering the risk of falls, as it effectively reduces movements associated with discomfort.[6] It is imperative to routinely assess and adjust a patient's positioning to uphold their safety and decrease the probability of falls in medical facilities.

Elevated compliance levels imply that systematic monitoring of bathroom needs is thoroughly established, playing a vital role in averting falls that may occur during urgent trips to the restroom. Consistent checks on patients' bathroom requirements can diminish the risk of them trying to reach the bathroom independently.[6]

The presence of clutter in storage areas, work environments, hallways, and walkways can contribute to the likelihood of slip, trip, and fall incidents. Cords that lie exposed on the ground, extend across pathways, or become entangled near workstations can easily catch an employee's foot, leading to potential falls.10 Ensuring proper management of medical equipment and cords is imperative for the prevention of tripping hazards and falls.[6]

Moreover, by maintaining patients' personal items within easy reach, the likelihood of them having to reach or move in a hazardous way is diminished, which in turn helps to prevent falls.[6]

Regular evaluations of patients ensure they obtain the assistance they need when trying to move or participate in activities. This strategy significantly reduces the probability of patients attempting to get up without help, which is a common factor leading to falls.

Utilizing alarms and incorporating anti-slip mats are proven strategies for preventing falls, as they alert staff to possible incidents and enhance overall safety within the environment.[6]

In hospital environments, falls are a major contributor to injuries, and utilizing anti-slip mats can substantially lower the risk associated with these occurrences.[11] Proficiency in the implementation of anti-slip mats is essential for the prevention of falls. Studies indicate that the effective utilization of environmental modifications, such as anti-slip mats, considerably lowers the likelihood of falls among patients in hospital settings.[1] Facilitate dedicated training sessions that stress the importance of securing anti-slip mats. In conjunction with this, carry out periodic audits to evaluate compliance and refresh training materials to reflect the most recent evidence-based practices, ensuring that all incoming staff members are sufficiently trained.[1]

The compliance outcomes across all units have enhanced due to the ongoing oversight and repeated emphasis by the head nurses. The institution implemented the Bundles of Care for Fall, resulting in improved compliance with Performance Criteria across different units. The Quality Improvement Program (QIP) members consistently tracked compliance across all units.

CONCLUSION AND RECOMMENDATION

This Quality Improvement Project showed satisfactory to exceptional performance of the nursing staff in the implementation of Bundles of Care for Fall including the 6Ps. Consistent cross-monitoring and spot checking may play a role in monitoring and evaluation and eventually in the achievement of desired outcome, which is to prevent fall. This assessment may be conducted quarterly to evaluate its effectiveness. It may also be included in the Nursing Audit. Future studies may include standardized criteria for assessment and correlation with fall incidence as means of validating the outcomes.

AUTHORSHIP

All authors have verified that they satisfy the authorship criteria required for scientific proceedings.

DISCLOSURE OF CONFLICT OF INTEREST

There are no conflicts of interest to report from any of the authors concerning the results presented in this study.

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APPENDIX

Instrument

LUNG CENTER OF THE PHILIPPINES
Quezon Avenue, Quezon City

NURSING SERVICES

NAME:		**UNIT/WARD:**	
POSITION:			

Title of Competency: FALL BUNDLE COMPETENCY ASSESSMENT
Competency Statement: Proficiency in implementing bundles of care for fall prevention will be consistently demonstrated by the front-line staff of LCP

Instructions: Complete the assessment portion of this document using the key on the left side. Tally the total score of the assessment amd use the score interpretation at the right side for reference. The evaluator's signature validates the completion of each performance criteria.

Answer Key		
	0	Not Done
	1	Needs Improvement/Training
	2	Perform Well/Satisfactory
	3	Exceptional

Answer Interpretation	
1-13	Needs Improvement/Training
14-26	Perform Well/Satisfactory
27-39	Exceptional

PERFORMANCE CRITRIA	**ASSESSMENT**			
	0	**1**	**2**	**3**
SECURE AVAILABILITY OF ANTI-SLIP MATS FOR ALL IN-PATIENTS				
INTRODUCE THE FALL AGREEMENT FORM				
● Introduces and thoroughly discuss the importance and purpose of Fall Agreement Form				
RE-ASSESS FALL RISK				
● Completed Fall Risk Assessment				
● The patient's fall risk tag have been updated				
PROVIDE FALL ARM BANDS				
ENSURE FUNCTIONALITY OF CALL LIGHT				
● Evaluate call light functionality				
● Instruct the proper use of call light to patient and companion				
UTILIZE 6P's IN HOURLY ROUNDING				
PAIN: ask about pain and re-assess if previously medicated				
POSITION: is the patient in comfortable position?				
POTTY: does the patient need to go the the bathroom?				
PUMP: are pumps and its cord in proper place?				
POSESSIONS: does the patient have everything he needs within reach?				
PREVENTION: are bed alarms engaged? Anti-slip mats in place?				
EVALUATOR COMMENTS:				

Evaluator Name and Signature: _____

Date: _____

Staff Signature: _____

Date: _____

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  Libshitz HI, Mckenna RJ, Haynie TP, et al. Mediastinal evaluation in lung cancer. Radiology 1984; 151:295-99.

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  Murray, PR, Rosenthal KS, Kobayashi GS, Pfaller MA. Medical microbiology. 4th ed. St. Louis: Mosby; 2002.

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  Website

  World Health Organization. Hospital infection control guidelines for severe acute respiratory syndrome. April 16, 2003: http://who.int/csr/sars/infectioncontrol/en (accessed April 24, 2003).

- For a complete sample of references, please refer to http://www.nilm.gov/bsd/uniform_requirements.html

SUBMISSION OF CHECKLIST

LCP Form No. 61-006

Checklist Guide for Submission of Manuscripts to Scientific Proceedings	Check if accomplished
1. Instructions to Authors • Reviewed and understood **Scientific Proceedings** Guide to Authors.	
2. Cover Letter • Included cover letter as an attachment, with complete title of the work, list of all authors, clear identification of the corresponding author with complete contact information (institutional mailing address, work telephone, fax number, and work e-mail address)	
3. Author Form • Ensured all authors have qualified as authors based on ICMJE authorship criteria • Ensured all authors have read and agreed to the Declaration • Ensured all authors have read and provided Disclosure of Conflicts of Interest where existing • Submitted a scanned copy of the fully accomplished Author Form	
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5. Title • Indicated the complete title of the manuscript • Included full names of the authors (first name and last name), highest educational attainment, and name and location (region, province, country only) of not more than 1 institutional affiliation per author • Indicated if presented in a scientific forum or conference through a footnote stating the name, location and date of presentation	
6. Abstract • Provided an abstract conforming with the Guide for Authors: structured for Original Articles, Review Articles: Objective/s, Methodology, Results, Conclusion; unstructured for Case Reports and Feature Articles • Did not place cross references within the abstract	
7. Key Words • Provided 3-6 keywords (listed in MeSH) *[https://www.ncbi.nlm.nih.gov/mesh/]*	
8. Content • Provided text/content in IMRAD format (Introduction, Methodology, Results and Discussion, Conclusion) • Made sure all abbreviations are spelled out once (the first time they are mentioned in the text) followed by the abbreviation enclosed in parentheses • Made sure all measurements and weights are expressed in SI units • Provided information on institutional review board / ethics review committee approval • Included a statement of conflicts of interest where existing, source of funding for the study and manuscript, and acknowledgments to individuals/groups of persons, or institution/s	
9. Funding Sources • Disclosed funding source/s for the study on which the manuscript is based, to include the writing of the manuscript.	
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11. References • Ensured that all references cited in the text are in numerical order using Hindu-Arabic numerals • Ensured that all references followed the prescribed format	
12. Tables, Figures, Illustrations and Photographs • Ensured that all tables, figures, illustrations and photographs are cited in the text, in numerical order per type • Provided separate files for tables, figures and illustrations with clear file names for reference • Provided a title and legend (if appropriate) for each table • Provided a title, legend (if appropriate), and caption for each figure and illustration (caption should be no longer than 15-20 words) *Note: If table, figure, or illustration is adapted, state so, include the reference and permission for use of the item.*	

SPLCP-2021-ASC-001: Author Submission Checklist v.01.2021

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MISSION

We provide high quality health services and state of the art facilities for the diagnosis and management of respiratory and chest diseases, and promotion of lung health for the Filipino people with excellence and compassion, regardless of creed, color, sex, socio-economic status, and political affiliation.

CORE VALUES

Customer-focused
Commitment
Compassion
Creativity
Collaboration

SHARED VALUES

Concern and care for patients, employees and the institution
Responsibility and discipline
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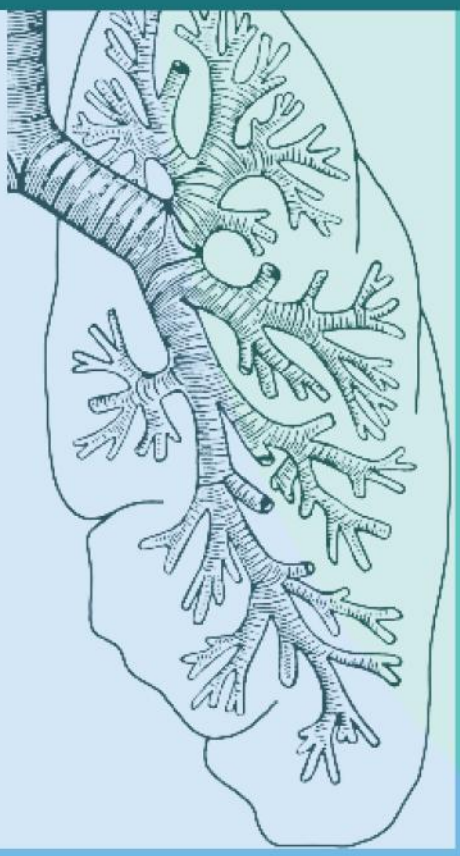

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