
| RESEARCH ARTICLE**The Moderating Role of Demographics on Secondary Traumatic Stress and Impostor Phenomenon among Nurses in Metro Manila: A Mixed-Methods Study****Ma. Elise C. Ventanilla, MA, RPm¹ ✉ Isabelita T. Arao, RN, MAN, PhD² and Rosalito G. de Guzman, PhD³**¹³*The Graduate School, University of Santo Tomas, Espana Boulevard, 1015 Manila, Philippines*²*Nursing Service, Quirino Memorial Medical Center, Quezon City, Philippines***Corresponding Author:** Ma. Elise C. Ventanilla, MA, RPm, **E-mail:** ventanilla.elise@gmail.com

| ABSTRACT

Filipino nurses caring for trauma patients in under-resourced tertiary government hospitals of Metro Manila face potential risks of Secondary Traumatic Stress (STS) and Impostor Phenomenon (IP). This study investigates STS and IP experiences among nurses, explores their relationship, the moderating role of demographics, and the challenges they face in caring for trauma patients. The study utilized a mixed-methods explanatory sequential design involving 138 trauma nurses from a tertiary government hospital in Metro Manila. Quantitative measures included the Secondary Traumatic Stress Scale and Clance Impostor Phenomenon Scale, while qualitative data was collected through individual interviews with 10 nurses. Sample sizes were justified: SEM requires a minimum of 10 cases per variable for quantitative and data saturation for qualitative data. Data gathering occurred in July-September 2023 (quantitative) and late September 2023 (qualitative). Results showed that nurses experienced mild STS (mean = 35.01) and moderate IP (mean = 36.12). Path analysis-structural equation modeling yielded a good model fit (SRMR= 0.052) and a significant positive relationship between STS and IP ($\beta=0.346$, $p<0.001$), indicating elevated STS predicted heightened IP, with stronger impact for females ($\beta=-0.148$, $p=0.037$), while weaker for married ($\beta=-0.165$, $p=0.023$). Qualitative themes highlighted the 'Psychological Burdens of Trauma Care', 'Healthcare System Constraints', and the 'Demands of Trauma Care Settings'. Given the results of the study, collaboration between hospitals and mental health professionals is crucial, considering that the former is best equipped to provide preventive and tailored psychological interventions for at-risk nurses to mitigate the development of more serious mental health concerns.

| KEYWORDS

Secondary traumatic stress, impostor phenomenon, trauma care, psychological burdens, healthcare system constraints

| ARTICLE INFORMATION**ACCEPTED:** 09 November 2024**PUBLISHED:** 22 December 2024**DOI:** 10.61424/rjpbs.v1.i1.171

1. Introduction

In the frontline of trauma care, nurses in the tertiary government hospitals of Metro Manila courageously witness and attend to the horrifying circumstances of patients who experience trauma from day to day. They serve as the backbone of these referral facilities for specialized care, surgery, and intensive care (DOH Administrative Order no. 2005-0029, 2005), responding to the life-and-death agonies of patients who pour in every day both from Metro Manila's population and from the surrounding provinces. As public entities, they accept all patients regardless of

their ability to pay, even while the demand far exceeds their facilities, equipment, personnel, and financial resources, as discussed in public health reports, including those of the Department of Health (BusinessMirror, 2017).

The chronic resource scarcity in Metro Manila hospitals leaves nurses juggling unmanageably high caseloads with limited support. On top of the ongoing lack of resources, the effects go beyond these limitations. These nurses are already at significant risk of experiencing Secondary Traumatic Stress (STS) due to frequent exposure to traumatic circumstances of their patients, and having to handle a significant trauma with very few resources could make it much worse.

Secondary Traumatic Stress

In high-pressure environments like public hospitals in Metro Manila, Secondary Traumatic Stress (STS) emerges as an important issue for nurses. The phenomenon was first recognized and described by Dr. Charles Figley in 1995. As defined, STS is the "natural consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other". This experience is not just empathy, it has distinct reactions with symptoms similar to PTSD (Figley, 1995). Key categories of symptoms seen in both STS and PTSD include:

1. Intrusion: Re-experiencing patients' trauma through involuntary, recurrent memories, nightmares, flashbacks or intense emotional reactions. This persistent recollection stems from detailed exposure to the disturbing events.
2. Avoidance: Consciously or unconsciously avoiding aspects associated with the traumatic exposure as a way to evade painful emotions triggered. This includes emotional numbness, withdrawal, or rejecting opportunities that may evoke upsetting memories.
3. Arousal: Physiological reactions like restlessness, agitation, problems with concentrations, heightened alertness and frightened reaction. This state of continual arousal stems from extended witnessing of the intense trauma material.

As suggested by the American Psychological Association (2013), trauma includes threatened and actual death, severe injury, or sexual violence. The threat exceeded the resource or coping ability. However, trauma does not have to be personally experienced as its criteria was broaden to encompass more than just firsthand experience. Research has shown that STS is a distinct notion and does not always lead PTSD (Figley, 1995).

A related concept to STS is compassion fatigue, originally describing nurse burnout (Joinson, 1992). It is a state of diminished empathic engagement to one's job due to excessive work-related stress and exposure to others' trauma. Another concept is vicarious trauma which is defined by McCann and Pearlman (1990) as outcomes from cumulative exposure to clients' trauma, leading to significant changes in helpers' worldview, identity, and cognitive schemas. Nevertheless, unlike in STS, compassion fatigue and vicarious trauma do not imply PTSD-like symptoms as consequences of frequent trauma exposure.

To conclude, the APA (2013) definition of trauma is used and considered in this study concerning common experiences of patients of tertiary hospitals in the country, caused, for instance, by accidents, crime, serious physical injuries, critical illnesses and so on. Therefore, trauma in this study does not imply other types of experience, such as workplace bullying or other non-life-threatening distress. The subject of interest is STS experienced by nurses due to regular exposure to severe incidents of trauma in their patients, which can be exhibited in the form of symptoms resembling PTSD without necessarily actually meeting all the diagnostic criteria for the disorder. In this study, STS was determined based on the Secondary Traumatic Stress Scale scores exceeding the established cutoff point of 38. Nurses scoring above the cutoff point on the aforementioned instrument were identified as experiencing STS (Bride et al., 2004).

Literature shows the spread of STS among nurses. A thorough review of the data delineates that STS varies in different geographic locations and specialized areas in a hospital using different psychometric surveys. Studies reveal remarkably high levels of STS among nurses globally, with staggering rates up to 96.3% of participants who

met the criteria of STS in Iran ($M= 26.90$, $SD= 5.66$, $N= 400$; Salimi et al., 2020), 59% in Portugal ($N= 87$; Borges et al., 2019), and a mean score of 45.38, indicating high severity in Cyprus ($SD= 12.97$, $N= 233$; Karanikola et al., 2022) and Jordan ($M= 46$, $SD= 12.45$, $N= 202$; Ratrout & Hamdan-Mansour, 2020) utilizing the standardized test-Secondary Traumatic Stress Scale (STSS). Over a third of Spanish oncology nurses also face high STS levels ($N= 297$; Arimon-Pagès et al., 2019). In Greece, 65.8% presented moderate to high STS ($M=44.00$, $SD= 13.93$; $N = 222$; Trosuvelas et al., 2022). These alarming measurements underscore the urgent need for further assessment and supportive interventions.

Additional research consistently identifies a moderate STS pattern at concerning levels. The Professional Quality of Life Scale (ProQOL) identified prevalence around 25-28% among American and Iranian nurses (Bock et al., 2020; Babaei & Haratian, 2020), aligning with mean scores of 24.2 ($SD= 5.8$, $N= 10,305$) in Korea denoting moderate ranges (Lee et al., 2021). In the Philippines, a study conducted primarily aimed at measuring compassion fatigue at Philippine General Hospital (PGH) reveals that, based on one of the results, healthcare workers across all ages grapple with moderate STS (Morante, 2022). Though lower than top-tier crisis levels, these persistent moderate distributions still warrant attention across health systems to mitigate potential fallout.

Aside from the nurses' challenges regarding STS that originate from external loads, coping with the emotional strain of caring for trauma patients may only be one aspect. Filipino nurses may also face a hidden weight: the persistent self-doubt associated with the Impostor Phenomenon (IP) that reflects an internal psychological experience.

Impostor Phenomenon

The term Impostor Phenomenon (IP) was coined in 1978 by psychologists Pauline Rose Clance and Suzanne Imes. It is defined as a persistent feeling of inadequacy, self-doubt, and intellectual fraudulence despite evidence proving one's competence and accomplishment (Clance & Imes, 1978). Individuals with IP have a discordance in what they know about themselves and what they think the outside world knows about them. Despite the self-declared lack of success and unworthiness of it, they are also afraid of negative evaluation (Clance et al., 1995).

Although IP is not deemed a clinical disorder, research concluded on the psychological stress and distress associated with high IP, even at the subclinical level (Topping & Kimmel, 1985). Instruments like the Clance Imposter Phenomenon Scale had been created to quantify its traits. Here are the six characteristics of IP identified by Clance and Imes (1985):

1. Fear of evaluation: The persistent fear of being found as a "fraud" triggers the fear of criticism or judgment.
2. Need to be the best: Although controlled by the assumption of one's inferiority, imposter individuals are propelled to succeed by a need to demonstrate they are better, leading to self-comparison and feelings of inadequacy.
3. Discounting achievements: Credit is given to luck, accurate timing, or other external stimuli rather than their accomplishment.
4. Perfectionism: High standards and forceful self-judgment create a sense of doom and concern about the future.
5. Fear of failure: Fearfully paralyzed, IP may overwork or procrastinate, reinforcing the feeling of being an imposter.
6. Guilt about success: The feeling that one is not eligible for achievement, the fear of being rejected, and the apprehension of embracing new challenges.

Studies show IP is associated with anxiety and depression (Cokley et al., 2017) and in healthcare, it may result in doctors having lower confidence in solving problems, which could lead to negative patient care outcomes (Lin et al., 2023), hinders persons' ability to advance in their careers (Gottlieb, 2020), and ultimately limits their contribution to the field (Siddiqui et al., 2024). In contrast, according to Dr. Ami Rokach, psychology professor from York University,

the Impostor Phenomenon also has positive consequences; it might serve as an indirect motivator for personal growth. Understanding own limitations, which include not knowing everything, might stimulate a person to constantly learn, increasing the chance to develop and even make a significant impact either on scientific knowledge or society (Rocach & Boulazreg, 2020 as cited in APA, 2021).

Hence, the operational definition of the Impostor Phenomenon in this study focuses on trauma nurses in a tertiary government hospital setting, which requires a high level of external accountability. It is characterized by self-doubt that persists over time, feelings of intellectual fraudulence, and an inability to internalize success, notwithstanding evidence of competence and success. This aligns with Clance and Imes' (1978) definition. Nonetheless, this study also acknowledges the positive aspects of less intense IP, as it can be a motivator for personal development. The presence of IP was identified using a reliable and validated tool, the Clance Impostor Phenomenon Scale, with scores above the set threshold of 62 being considered to have experienced the phenomenon. Such nurses were further termed to have IP (Clance, 1985).

While research specifically exploring IP among Filipino nurses is scarce, existing international studies indicate that IP is broadly affecting nurses. Indeed, a significant body of research reveals the profound impact of the IP on nurses.

Edwards-Maddox (2023) found that 63.5% of American nurses report frequent intense IP feelings. Aligning rates emerge through Darna's (2022) 55.9% finding among advanced practitioners like nurse anesthetists in the United States, with a mean CIPS score of 44.6 (SD= 14.4, N= 170). Muneer et al. (2021) identified a mean score of 61.08 (SD= 11.12) IP frequency among 63 Pakistani nurses. IP similarly impacts over a third (37.5%) of graduate allied health students (Schumulian & Fleming, 2020). Among pre-licensure nursing students, 48.7% wrestle with frequent to intense self-doubt, rising above 92% experiencing at least moderate IP traits, with mean CIPS scores from 57.0 to 60.13 (Jacobs & Sasser, 2021). These studies, while not specific to Filipino nurses highlight the concerning global presence of IP in nursing. Considering the distinct cultural and healthcare system in the Philippines, dedicated research exploring IP among Filipino nurses is crucial.

Potential Relationship between Secondary Traumatic Stress and Impostor Phenomenon

While STS and IP have been studied independently within the nursing literature, a knowledge gap exists about the potential relationship between the two phenomena. This gap merits considerations to describe whether as nurses' STS levels increase from frequent exposure to trauma, so too may their IP. Thus, the potential relationship between STS and IP commands scrutiny.

Moderating Role of Demographics on Secondary Traumatic Stress and Impostor Phenomenon

The impact of demographics on the possible relationship of STS and IP has not yet been explored. However, insights can be attained from studies conducted independently on the impact of both STS and demographics and the impact of IP and demographics.

The evidence is mixed about the association between STS and demographics among nurses. Research suggests that less exposure to high stress situations and being a newer nurse may render some nurses more vulnerable (Borges et al., 2019; Salimi et al., 2020), although the findings have also been challenged. For instance, Trosuvelas, et al. (2022) found that married nurses had higher STS levels. Risk based on sex characteristics is also variable in the literature; some studies show females are at greater risk (Borges et al., 2019; Karanikola et al., 2022), while Rivera (2020) found that males are more likely to score high on the STS scale because they are the minority group. Other research demonstrates no significant discrepancy among sex characteristics, educational background and nursing specialty (Ratrout & Hamdan-Mansour, 2020; Bock et al., 2020). The inconsistencies emphasize the need further investigation.

The association between IP severity and the demographics of nurses is inconsistent. Some research suggests that younger, less experienced nurses experience greater levels of IP (Karim, 2022; Darna, 2020). Findings that are related to sex characteristics also provide inconsistent results. While some research (Darna, 2020; Karim 2022; Schumulian & Fleming 2020) shows that female nurses are more likely to suffer from IP, others (Bravata, 2020), note that both sex

characteristics are equally likely to be affected by IP. In contrast, Karim (2022) noted that widowed nurses had higher levels of IP, indicating that pressures from their everyday lives may intensify notions of the impostor phenomenon. While there may be a connection between age, experience, sex, and IP, more investigation is required to determine the precise nature and direction of such relationships.

Challenges in Trauma Care

Recent qualitative literature reveals an emerging pattern of emotional burden and resource limitations in nursing. In one qualitative study, nurses caring for trauma patients reported feeling overwhelmed, and expressed feelings of powerlessness, confusion, and self-blame while witnessing traumatic events (Ju, 2020; Barber, 2023). These issues are further compounded by high-pressure environments and inadequate institutional support that often reflect a lack of understanding (Ju, 2020). Nurses caring for cancer patients likewise described feelings of stress, sadness, and helplessness related in part to inadequately trained staff, inadequate staffing, and resource constraints (Anderson, 2021). Beyond resource limitations, nurses in this study described emotional burden related to being exposed to the trauma and suffering of cancer patients. These studies have led to calls for interventions that address the emotional burden and resource constraints that are placed on nurses. In particular, these authors suggest better training, institutional support systems, and resource allocation as necessary to protect nurses and the quality of treatment they offer to their patients.

The study aims to provide empirical data on Secondary Traumatic Stress and Impostor Phenomenon among Filipino nurses taking care and treating trauma patients- a group overlooked, yet considered high risk. While these phenomena have been quantified among nurses in international studies, the experience of Filipinos is yet to be explored. A mixed-methods design (quantitative and qualitative) was employed to have a more thorough understanding about the Filipino nurses' experience. 138 Filipino nurse taking care trauma patients were chosen from a Metro Manila tertiary government hospital. The Secondary Traumatic Stress Scale and Clance Impostor Phenomenon Scale were used for the quantitative phase. Semi-structured interviews were also done for the qualitative phase.

The present study pursued multiple objectives. First, it sought to measure the Secondary Traumatic Stress and Impostor Phenomenon experiences within this particular population- Filipino nurses who are assigned in the trauma care areas in the hospital. Second, it explored a hypothesized STS-IP relationship, investigating whether heightened STS predicted increased IP, thereby bridging a notable gap within the existing literature. Third, the research sought to elucidate how demographics (e.g., age, sex, marital status, length of clinical nursing experience) moderate the STS and IP relationship. This resolved an acknowledged blind spot in the prior literature in which findings on the association between STS and demographics have been inconsistent and contradictory. Further examination was necessary to determine the nature and direction of this impact. The study also addressed equivocal findings around IP and demographics. For example, whereas certain demographics (e.g., older nurses reported lower IP) appeared to bear some connections, research called for continued investigation and clarification in order to comprehensively understand these associations. Finally, the study was meant to fill the gap of limited research on IP among Filipino nurses, notwithstanding its global pervasiveness. The incorporation of qualitative methodologies offered significant potential for contextually-rich insights into the experienced challenges of nurses providing care for trauma patients.

Given the limited knowledge on Filipino nurses' experiences of both STS and IP, this study endeavors to explore this previously unexplored domains and identify which subgroup of nurses are at risk for these phenomena. It seeks to reframe the challenges Filipino nurses face as occupational hazards that can be addressed, rather than failings of individual nurses themselves. Through quantifying the emotional challenges experienced by these nurses, it aims to reduce stigma and increase help-seeking behaviors. The findings can be used as a basis in emphasizing the importance of building support systems, that include early intervention strategies and tailor-made policies, so that as the backbone of healthcare, these nurses' welfare can be safeguarded. Lastly, this research will highlight the vital roles of mental health professionals (e.g. psychologist and psychometrician) in ensuring the welfare of healthcare workers particularly nurses, potentially leading to transformed healthcare environments. Thus, the ultimate goal of

this research is to attempt to provide insights into the challenges of Filipino nurses and help to draft a more supportive and sustainable environment for the nurses themselves, as well as their patients.

1.1 Theoretical Framework

To completely understand the phenomena being studied, it is necessary to discuss the two theories used to explain Secondary Traumatic Stress: Secondary Traumatic Stress Theory and the Ecological Theory of Trauma. The Impostor Phenomenon was explained using the Self-Discrepancy Theory. The synthesis of these theories will foster a greater understanding of both phenomena, including the possible relationship between the two.

Secondary Traumatic Stress Theory (Figley, 1995)

Figley's landmark 1995 work on Secondary Traumatic Stress unveiled a theory that explained how helpers experience STS symptoms as they help others by mirroring the trauma of the individuals they help. This theory highlighted key variables that dictate STS development and has served as a roadmap for understanding the emotional complexity that comes with helping. Yet, at the heart of it all is empathy, a force with a twofold nature. Helper's *empathetic abilities* allow them to truly understand the pain their clients are enduring, but it is through *empathic concern* or the desire to alleviate the suffering that their drive comes. This combined empathetic ability and concern corresponds to the *empathic reaction* or work done in helping the client heal. However, *emotional contagion* in which the helper begins to feel the same emotions as the client, can result from this emotional connection (Figley, 1995).

Ecological Theory of Trauma (Dutton & Rubinstein, 1995)

In 1995, Dutton and Rubinstein further explained the psychological mechanisms underlying Secondary Traumatic Stress. They postulated four components of STS responses: (1) the 'traumatic event,' which can be seen as varying in intensity, frequency, and the extent to which the helper realizes others' suffering; (2) the helper's 'coping strategies; (3) 'PTS reactions,' comprised of the indicators of distress, cognitive schema changes, and relational disruptions; and (4) 'personal and environmental factors,' which they proposed mediate the experience of helping.

Ultimately, emotional closeness to others' pain impels, while also affording transmission of traumatic stress without proper protections. Through such insights, Dutton and Rubinstein powerfully capture novice psychologists' paradox: that their innate empathy both moves them to fundamentally transform and leaves them more readily wounded than the norm within intrinsically hazardous roles.

Self-Discrepancy Theory (SDT, Higgins, 1987)

The SDT discusses how individuals see themselves. It defines three dimensions of self-state representations in the third person: the 'Actual Self,' or whom the person thinks they are according to themselves and others; the 'Ought Self,' or whom they think they should be based on duty or obligation; and the 'Ideal Self,' or who they want to be based on personal aspirations and the perspectives of significant others. Therefore, SDT argues that discord of these self-concepts can lead to discomfort. Such incongruity might evoke negative emotions and a motivation to reconcile these differences (Higgins, 1987).

For nurses caring for trauma patients, the 'Ideal Self' might be a kind, compassionate nurse who makes an impact and helps alleviate the suffering of his/her patient. However, the 'Ought Self' might be filled with pressures from society to perform without error, maintain the profession's standards at any cost, and prioritize the patient's well-being above all else, even when it means personally sacrificing everything in the process.

The further the 'Actual Self' is from the 'Ideal Self' or 'Ought Self', the greater the conflict individuals might face. Nurses might feel the pressure not only to go above and beyond their call to duty but also to constantly emulate tiers of perfection. The suffering and trauma nurses witness their patient's experiences might lead them to question if their attempts at improving the health conditions of their patients are making any difference at all. They might feel defeated and emotionally exhausted as they try to cope with their ultimate goal of helping others, only to destroy their emotional and mental state in the process.

Thus, if nurses perceive themselves as falling short of their 'Ideal Self's' aspirations or not meeting the 'Ought self's' expectations, a significant mismatch might lead to emotional discomfort, causing the individual to employ coping mechanisms to lessen the discrepancy. In the context of IP, such mechanisms might take the form of setting unrealistically high standards that are impossible to meet, not acknowledging achievements, employing negative talk and self-criticism, and fearing failure if the individual believes that he/she has little control over the discrepancy.

1.2 Research Questions

1. What are the demographics of the participants in terms of:
 - 1.1 Age
 - 1.2 Sex
 - 1.3 Marital status
 - 1.4 Length of clinical nursing experience
2. What is the profile of the participants in terms of Secondary Traumatic Stress as measured by the Secondary Traumatic Stress Scale?
3. What is the profile of the participants in terms of the Impostor Phenomenon as measured by Clance Impostor Phenomenon Scale?
4. Is there a relationship between Secondary Traumatic Stress and Impostor Phenomenon among nurses working in a Tertiary Government Hospital in Metro Manila?
5. What are the moderating roles of the following demographics on the relationship between Secondary Traumatic Stress and Impostor Phenomenon?
 - 5.1 Age
 - 5.2 Sex
 - 5.3 Marital status
 - 5.4 Length of clinical nursing experience
6. How do participants perceive and describe the challenges they face in providing nursing care to patients who experienced trauma, and how do these challenges relate to their experiences of Secondary Traumatic Stress and Impostor Phenomenon?

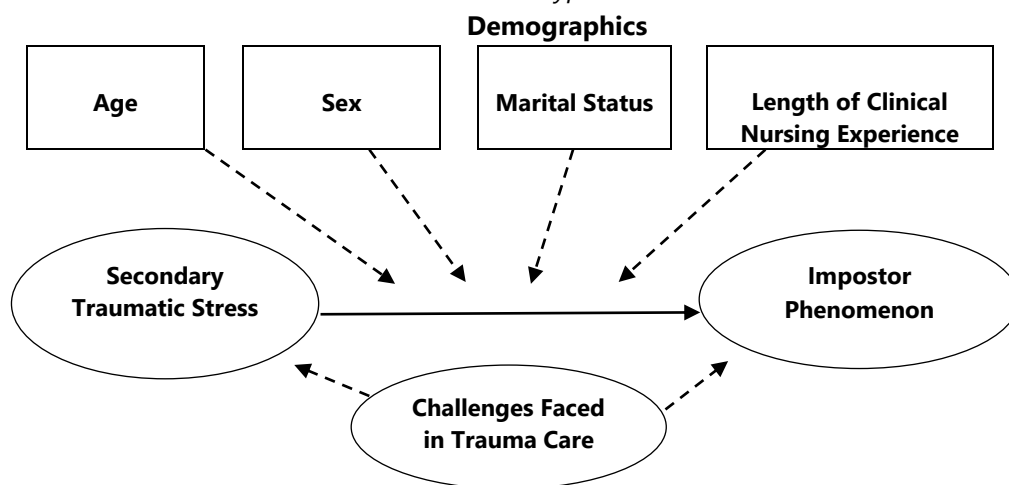
1.3 Hypothesized Model

As seen in the hypothesized model (Figure 1), this study hypothesized the moderating role of demographics in the potential relationship between Secondary Traumatic Stress (independent variable) and Impostor Phenomenon (dependent variable) among nurses who care for trauma patients. Additionally, the challenges faced by nurses in trauma care are expected to contribute to the development of STS and IP. A solid line connecting STS to IP suggests that higher levels of Secondary Traumatic Stress may directly predict higher levels of Impostor Phenomenon.

The third variables are the various demographics (age, sex, marital status, and years of clinical nursing experience). The dashed lines connecting the demographics to the hypothesized relationship between STS and IP represent the possibility that these characteristics moderate the relationship between STS and IP. In other words, a nurse's age, sex, marital status, or length of clinical nursing experience might impact the strength and/or direction of the relationship between STS and IP. Consequently, it is hypothesized that the positive STS-IP relationship could be stronger, weaker, and/or reversed depending on the demographics. For example, the positive STS-IP relationship could be stronger for younger versus older nurses. It may be more evident among female nurses than male nurses.

A broken line connecting the concept "Challenges Faced in Trauma Care" to both STS and IP in the paradigm signifies that the study explores how these challenges might impact, but not directly cause, the experiences of STS and IP among the nurses.

Figure 1
Hypothesized Model



2. Methodology

2.1 Design

This cross-sectional study used a mixed-methods, specifically explanatory sequential mixed-methods design. The quantitative phase employed a descriptive-correlational design, particularly predictive correlation, to examine the predictive relationship between STS and IP, as well as the role of demographics as multiple moderators.

The qualitative exploration employed a descriptive qualitative design, which yields a direct summarization of participant events and experiences from their subjective viewpoints without applying deep analytical interpretation. This approach aims to explain and contextualize the quantitative findings from phase one.

Finally, quantitative and qualitative data were integrated to present a more comprehensive understanding of the trauma nurses' challenges and their association with STS and IP.

2.2 Subjects and Study Site

The study was done in a tertiary government hospital in Metro Manila, Philippines primarily because its area of specialization is the management of complex trauma cases. The hospital has 1,000 beds and approximately 600 nurses and sees patients, both adults and children. The sample population was 138 registered nurses in the trauma-related areas of the hospital. The trauma-related areas include the emergency room (ER), surgery intensive care unit (SICU), surgery ward, surgery orthopedic ward, operating room (OR), and delivery room operating room complex. Nurses solely assigned to administration were excluded. A minimum required sample size of 118 nurses was set using Cochran's formula from the Sample Size Calculator at the Australian Bureau of Statistics (ABS) for drawing statistically powered quantitative inferences at 95% confidence level and 5% confidence interval and proportionality of 50%. The final surveyed sample enrolled 138 nurses through convenience sampling. The sample size was justified by several considerations. First, the coverage rate is high, approximately 82%. Secondly, the moderated path analysis demonstrated a moderate direct effect $\beta = 0.346$ of STS on IP. In general, substantial regression requires a smaller sample size compared to weak paths. Third, the sample size was guided by the common rule-of-thumb recommendations of a minimum of 10 cases per variable (Nunnally, 1967) and within the range of the recommended minimum lower limit of 100-150 for SEM analysis (Kline, 2005; Ding et al., 1995).

In the qualitative study, recruiting participants who scored high on psychometric surveys began with five participants and was later expanded to include 10 participants, ensuring data saturation. This process adhered to established standards for reliable inferences regarding sample size in the qualitative approach. The mean STSS score of 39.2 indicated an overall moderate severity of STS (Bride et al., 2004) among all the participants who partook in the interview, and the average CIPS score of 63 reflects a frequent occurrence of the IP (Clance, 1985).

2.3 Measures

Demographic Questionnaire: Personal information such as age, sex, marital status, length of clinical nursing experience, and the nurses' area of designation in the hospital were gathered through this questionnaire.

Secondary Traumatic Stress Scale (STSS): The STSS served as a 17-item Likert scale with five points, measuring intrusion, avoidance, and arousal during the past week. High scores suggested more severe STS experience. The scale's internal reliability was $\alpha = .93$, and its factorial validity was confirmed through confirmatory factor analysis (Bride et al., 2004). Additionally, scholars found in their research that the STSS is the sole peer-reviewed, validated tool to determine the existence and severity of STS in nurses (Watts & Robertson, 2015). Considering these findings, this instrument was chosen for this study.

Clance Impostor Phenomenon Scale (CIPS): The CIPS measured the severity of the impostor phenomenon using 20 items rated on a five-point Likert scale. High scores indicated high impostor feelings (Clance, 1985). Additionally, the internal reliability of the scale was well established, $\alpha = .93$, as well as discriminant and factor validity, which made this scale appropriate for the study. Moreover, because of its practicality and efficiency, it is recommended for clinical assessment and research (Crisman et al., 1995).

Interview Protocol: The interview was initiated with the help of a script meant to inform the interviewee and close with study information. The researcher then followed up with background questions. The process followed a semi-structured format, commencing with broad questions and then advancing to more specific ones. Prompts were used to solicit elaboration, and protocol adjustments were made as situational needs arose. All interviews were close to 45 minutes.

2.4 Data Gathering Procedure

Figure 2: Data Gathering and Analysis Workflow for Phase One: Quantitative and Phase Two: Qualitative

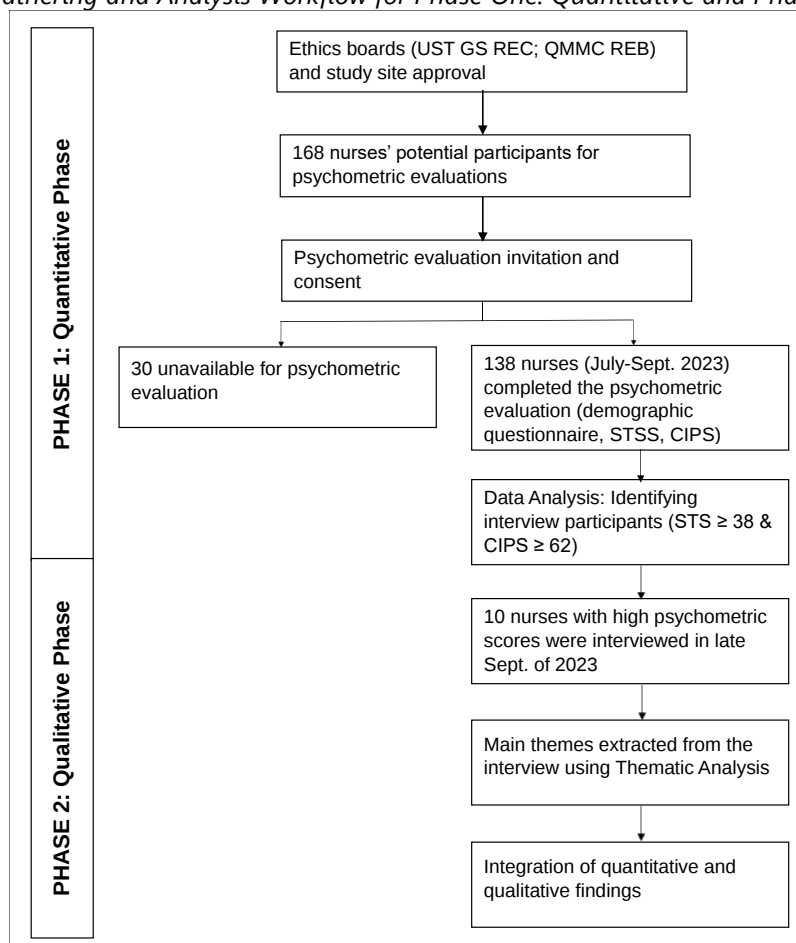


Figure 2 shows the summary of workflow which started from obtaining ethical approval from two research ethics boards: University of Santo Tomas Graduate School Research Ethics Committee (UST GS REC; GS2022-030) and Quirino Memorial Medical Center Research Ethics Board (QMMC REB; REB GCS 2023). Permission was also sought from the hospital's administrator. Informed consent was explained and obtained from nurses. Participation was voluntary and did not affect their employment at the hospital. The quantitative data was collected by distributing the questionnaire and tests to eligible participants in the nursing office. The data collection took place from July to September 2023.

After collecting the quantitative data, it was analyzed to identify eligible participants for the qualitative study. The researchers selected participants who met an STS cutoff score of 38 and above (at least moderate symptoms) or had frequent to intense IP experiences with scores of 62 and above. Ten available nurses who met the cutoff scores for STS and CIPS were invited and consented to participate in individual 45-minute semi-structured interviews, ensuring saturation of data. To assist with the accuracy of data collection, interviews were held using the Filipino-English language in a private space within the nursing office to ensure participant confidentiality. However, the semi-structured interview guide questions were written in English. All participants were audio-recorded with permission. Interviews were then transcribed verbatim and analyzed through thematic analysis. The interviews were done in the last weeks of September 2023. The concluding step was the integration of quantitative and qualitative data to comprehensively understand the challenges nurses experience in caring for trauma patients, focusing on STS and IP.

2.5 Ethical Considerations

The research complied with the aforementioned ethical standards approved by USTGS REC and QMMC REB. In particular, informed consent discussions and signings were conducted with the utmost respect for the participants' rights, ensuring their voluntary and withdrawal comprehension. The participants surveyed were competent individuals who had been exposed to trauma but did not belong to the vulnerable group. To mitigate the risk of emotional distress during data collection, safety measures such as Psychological First Aid and the duty of coding and storing data securely and confidentially were implemented to maintain the participant's rights and welfare.

2.6 Data Analysis

Descriptive statistics were conducted to describe demographic data. Frequency and percentage distributions were utilized to summarize categorical variables.

Scores from the STSS and CIPS depicted participants' STS and IP levels, accompanied by measures of central tendency and standard deviation alongside frequency and percentage distributions to aid data interpretation.

The relationship between STS and IP, with demographics as multiple moderators, was measured through path analysis- structural equation modelling (SEM) conducted with WarpPLS software. Path analysis is a subtype of SEM that estimates direct and indirect relationships between variables to determine the effects' direction, strength, and statistical significance. It helped determine a suitable estimator for the causal model, evaluating goodness fit and multiple moderating factors (Stage et al., 2004).

The qualitative data analysis in this study followed the thematic analysis method developed by Braun and Clarke (2006), made up of a careful six-step process: It started with repeated listening to audio recordings to familiarize with the participants' responses, data were transcribed. Data were closely read, and notes were made, including reflexive journaling during data collection and analysis. The next step was systematically organizing data and generating relevant codes, employing open coding, which did not allow the researchers to use their language.

In initial coding cycle, the researchers applied elemental methods, such as descriptive coding and in vivo coding, and affective methods, such as emotional coding and value coding, which aligned with the study's descriptive qualitative design. For the process of searching for themes; codes were scrutinized and then grouped based on similarity and frequency, which led to the creation of subthemes. These subthemes were then organized and developed into broader themes to address the research question. Reviewing and renaming preliminary themes; a color-coding process of related data was done to ensure its coherence and distinction. The resulting themes were defined to capture their essence and explore their relationships. The final step involved the write-up of a comprehensive report, integrating translated verbatim data, quantitative results, and qualitative findings.

In order to enhance the trustworthiness of the findings, the researcher utilized several techniques, including member checking through consultation with the chief nurse on the interpretation of the data and an external validation conducted by a registered psychologist affiliated with the Masters of Psychological Services. This process confirmed the accuracy of the data gathering, analysis procedures, organization of themes, and the study results. Additionally, an audit trail was established through careful documentation of the research process, including the research plan, interview protocols, data collection methods, data analysis processes, and every decision made during the study. This audit trail ensures both transparency and reproducibility in the research. Reflexive journaling and memo-ing were also used so that the researchers could reflect on the participant's responses and the whole research journey.

3. Results and Discussion

3.1 Phase 1: Quantitative Results

3.1.1 Demographics of the Participants

Table 1. Distribution of participants when grouped according to their demographics (N=138)

Demographics		Frequency	Percentage
Sex	• Female	71	51.4%
	• Male	67	48.6%
Marital Status	• Single	84	60.9%
	• Married	54	39.1%
Area of designation	• Operating Room	40	29.0%
	• Emergency Room	35	25.4%
	• Delivery Operating Room Complex	31	22.5%
	• Surgery Ward	12	8.7%
	• Surgery Intensive Care Units	10	7.2%
	• Surgery Orthopedics Ward	10	7.2%
Total		138	100%
		Mean	Standard Deviation
Age		34.98	4.722
Length of Clinical Nursing Experience		7.25	4.080

Descriptive statistical findings for the sample are presented in Table 1. Female nurses predominated (51.4%), averaging 34.98 years old (SD= 4.722), mostly millennials. About 60.9% were single. Most participants worked in the Operating Room (29.0%), with an average nursing tenure of 7.25 years (SD= 4.080).

3.1.2 Profile of the Participants in Terms of Secondary Traumatic Stress as Measured by Secondary Traumatic Stress Scale

Table 2. The frequency of responses and percentage in each secondary traumatic stress classification

STS Classification	Frequency	Percent
• Little	28	20.3%
• Mild	69	50.0%
• Moderate	17	12.3%
• High	9	6.5%
• Severe	15	10.9%
Total	138	100.0%
	Mean	Standard Deviation
	35.01	8.963

Parameters

(27 or less)	Little
(28-37)	Mild
(38-43)	Moderate

(44-48) High
(49 or more) Severe

Table 2 shows mild STS among the nurses surveyed, reflected by the average STS score of 35.01 (SD= 8.963), consistent with 50% of the participants reporting mild STS. Despite the average score suggesting mild levels of STS or below the established cutoff score, nearly one-third (29.7%) of participants scored above the cutoff, indicating the presence of STS. This highlights a substantial subgroup of nurses at higher risk despite the overall average falling below the cutoff.

These findings are consistent with several recent studies which reveal the STS level among nurses (Karanikola et al., 2022; Bock et al., 2020; Babei & Haratian, 2022; Lee et al., 2020; Lee, Shin & Hong, 2022), almost a quarter of the nurses investigated in these studies reported to experience at least moderate STS.

However, global studies found even higher proportions of nurses suffering from STS and with high to severe average levels (Salimi et al., 2020; Borger et al., 2019). The findings indicate that STS is a significant concern among nurses, and a substantial percentage of the nurses are susceptible to developing symptoms of STS.

Table 3. Mean, median and standard deviation of secondary traumatic stress subscales

STS Subscales	Mean	Median	Standard Deviation
Intrusion	10.52	10.00	2.945
Avoidance	13.58	13.00	3.945
Arousal	10.93	11.00	2.844
Total score	35.01	35.00	8.963

The highest mean severity score across STSS subscales was for avoidance symptoms (M= 13.58, Median= 13, SD= 3.945), as detailed in Table 3.

3.1.3 Profile of the Participants in terms of Impostor Phenomenon as Measured by Clance Impostor Phenomenon Scale

Table 4. The frequency of responses and percentage in each impostor phenomenon classification

IP Classification	Frequency	Percent
• Few	12	8.7%
• Moderate	90	65.2%
• Frequent	35	25.4%
• Intense	1	0.7%
Total	138	100.0%
Mean		Standard Deviation
54.12		9.423

Parameters

(40 or less) Few
(41-60) Moderate
(61-80) Frequent
(81 or more) Intense

Table 4 depicts that the average CIPS score for the entire study sample was 54.12 (SD= 9.432), consistent with the moderate range score of most of the respondents (65.2%). The use of the CIPS cutoff score of ≥ 62 to classify impostors and non-impostors found more than one-quarter of participants (26.1%) scored in the impostor range. Moderate impostorism was most prevalent, but a sizeable portion of nurses demonstrated more pronounced manifestations.

The moderate mean IP scores (54.12), below cutoff points, may imply a positive impact on nurses. These scores possibly suggest a level of self-awareness that inspires them to improve their knowledge and skills as professionals. Nevertheless, 26.1% falls within the IP score of frequent to intense, which indicates an opportunity for targeted support. These nurses can benefit from interventions that address feelings of self-doubt while promoting self-awareness and a drive for growth.

On the other hand, the current study's findings are lower than most recent studies, which classified over half of their participants as meeting IP criteria (Edwards-Maddox, 2023; Darna, 2020; Jacobs & Sasser, 2021). Only Shumalian and Fleming (2020) reported a comparable IP rate, suggesting that the prevalence of intense impostor phenomenon may be higher in other global countries.

Table 5. Model fit index and quality indices

Model Fit Index	Index	Threshold	Interpretation
Average path coefficient (APC)	0.136 (p=0.025)	p <= 0.05	Excellent
Average R-squared (ARS)	0.333 (p< 0.001)	p <= 0.05	Excellent
Average adjusted R-squared (AARS)	0.286 (p< 0.001)	p <= 0.05	Excellent
Average block VIF (AVIF)	1.499	acceptable if < 5, ideally < 3.3,	Ideal
Average full collinearity VIF (AFVIF)	1.373	acceptable if < 5, ideally < 3.3,	Ideal
Tenenhaus GoF (GoF)	0.572	small > 0.1, medium > 0.25, large > 0.36 0.1, medium > 0.25, large > 0.36	Large
Simpson's paradox ratio (SPR)	0.889	acceptable if > 0.7, ideally 1	Acceptable
R-squared contribution ratio (RSCR)	0.939	acceptable if > 0.9, ideally 1	Acceptable
Statistical suppression ratio (SSR)	0.889	acceptable if > 0.7	Acceptable
Standardised root mean squared residual (SRMR)	0.052	acceptable if < 0.1	Acceptable
Standardised mean absolute residual (SMAR)	0.033	acceptable if < 0.1	Acceptable
Standardised threshold difference count ratio (STDCR)	1	acceptable if > 0.7, ideally 1	Ideal
Standardised threshold difference sum ratio (STDSR)	1	acceptable if > 0.7, ideally 1	Ideal

Table 5 shows that model fit requirements are all accepted.

3.1.4 Relationship between Secondary Traumatic Stress and Impostor Phenomenon

Table 6. Path Analysis-SEM of the Relationship between STS and IP

Independent	Dependent	Std. Coefficient	Std. Error	p- value	Effect Size	Interpretation
STS	IP	0.346	0.079	<0.001	0.17	Significant

The path analysis-SEM results, shown in Table 6, found a significant positive relationship between Secondary Traumatic Stress and Impostor Phenomenon at $p < 0.001$. The predictive relationship of the phenomena indicates that as the score of STS increases, the level of IP also tends to increase. Moreover, the magnitude of the relationship, represented by the standardized coefficient ($\beta = 0.346$), revealed a moderate relationship between the two variables. This result makes a notable contribution by unveiling a novel relationship between STS and IP among nursing professionals.

Nurses designated to trauma care areas in tertiary government hospitals in Metro Manila are consistently exposed to patient suffering, regularly witnessing deaths and trauma from accidents and crimes, which can lead to the development of STS. As nurses experience emotional distress from witnessing trauma, internalizing their patients' experiences, and feeling frustrated about their ability to alleviate someone's suffering (Secondary Traumatic Stress Theory), they may begin to doubt their abilities and feel like impostors in their profession. The high-stress work environment and the pressure to meet unrealistic expectations can further contribute to IP development (Ecological Theory).

Over time, the demanding work environment can erode nurses' self-confidence and generate persistent feelings of inadequacy and self-doubt, especially if patient outcomes are unfavorable— characteristics of IP. The high expectations placed on nurses to perform flawlessly and prioritize patients fuel self-doubt, which causes nurses even to strive harder and push themselves to the limits "to prove" themselves as trustworthy professional nurses (Self-Discrepancy Theory). This continuous pressure often impacts their emotional well-being.

3.1.5 Moderating Role of Demographics on the Secondary Traumatic Stress and Impostor Phenomenon

Table 7. Path analysis results: moderating role of demographics on STS and IP relationship

Independent	Dependent	Std. Coefficient	Std. Error	p- value	Effect Size	Interpretation
Age	IP	-0.239	0.081	0.002	0.05	Significant
Gender	IP	0.026	0.085	0.381	0.001	Not Significant
Marital Status	IP	0.077	0.084	0.178	0.004	Not Significant
Years of Experience	IP	-0.051	0.084	0.273	0.005	Not Significant
Age * STS	IP	0.046	0.084	0.292	0.01	Not Significant
Gender *STS	IP	-0.148	0.082	0.037	0.049	Significant

Marital Status * STS	IP	-0.165	0.082	0.023	0.067	Significant
Years of Experience *STS	IP	-0.128	0.083	0.061	0.023	Not Significant

Table 7 shows that the relationship between STS and IP is stronger for female nurses compared to male nurses ($\beta = -0.148$, $p = 0.037$), effect size = 0.049, and weaker for married compared to single individuals ($\beta = -0.165$, $p = 0.023$), effect size of 0.067, pointing to an amplifying impact of the phenomena for female nurses and a protective role for married nurses.

The stronger relationship between STS and IP among female nurses corresponds to research indicating higher STS (Karanikola et al., 2022) and IP (Darna, 2022; Karim, 2022) in females, suggesting increased vulnerability. The finding is consistent with the Secondary Traumatic Stress Theory (Figley, 1995) about the role of empathy in heightening susceptibility to emotional contagion from trauma patients. It can be explained by studies revealing that women are generally more empathic than men (Pang et al., 2023; Nicklin, 2021; Baum, 2016; Mestre et al., 2009).

Another finding is that the risk of the impact of STS and IP was lower for married nurses, which contradicts the findings on marital status and IP of Trosuvelas et al. (2022). This suggests that a constant source of support and a feeling of belonging, such as a stable marriage, can serve as a sufficient buffer against the negative impact of the phenomena. However, it is important to note that this impact can be negated by having problems in marriage.

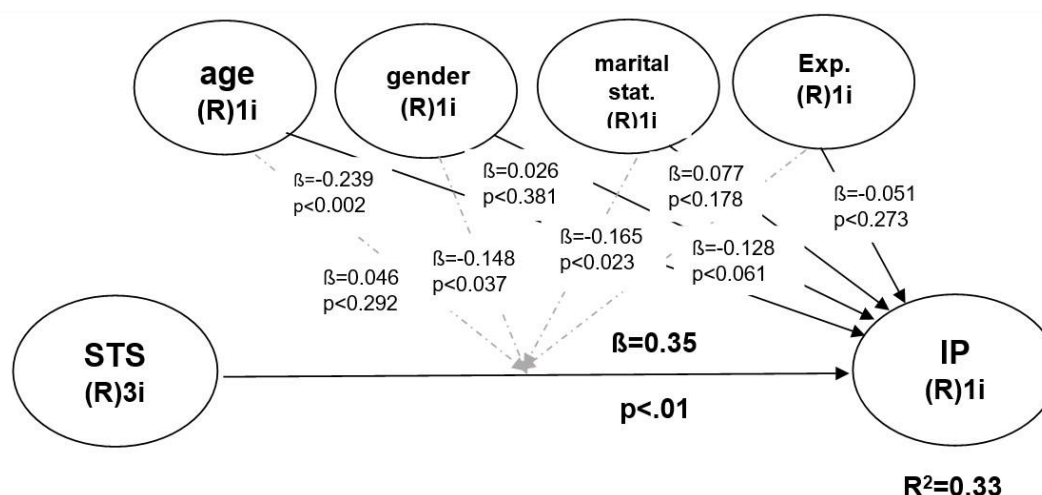


Figure 3. Path analysis-SEM model in a moderation analysis of demographics on the secondary traumatic stress and impostor phenomenon relationship.

Figure 3 presents the demographic variables (age, sex, marital status, clinical nursing experience) and two constructs: Secondary Traumatic Stress and Impostor Phenomenon. This highlights pathways and effect sizes, noting the moderating role of sex characteristics and marital status have on the relationship between STS and IP.

3.2 Phase 2: Qualitative Results

3.2.1 Challenges Faced in Trauma Care

The qualitative phase included a sample of 10 nurses, seven males, and three females, who were purposely chosen from high-trauma areas in a tertiary government hospital in Metro Manila; four were from the ER, two from the Surgery Ward, two from the SICU, and two from the OR. Across participants: the mean STSS score of 39.2 indicated

overall moderate severity of secondary trauma. The average CIPS score of 63 reflects the frequent Impostor Phenomenon.

The coding of the interviews produced seven sub-themes from the 24 initial codes, resulting in three main themes: the Psychological Burdens of Trauma Care, Healthcare System Constraints, and Demands of Trauma Care Settings (Table 8). The researchers identified and reported on these themes as per the perceived and described challenges of nurses in caring for patients who experienced trauma.

Table 8: *Themes, Subthemes, and Codes from Qualitative Analysis*

THEMES	SUBTHEMES	CODES
Psychological Burdens of Trauma Care	Self-doubt, the Weight of Choices	Reflective self-doubt Second guess actions taken "Feeling ko parang may kulang" (<i>feeling that something was lacking</i>) "Guilt" "I should have done better"
	Feeling Helplessness over patients' outcomes	Helplessness "Awa" (<i>pity</i>)
	Induced fear	Projected fear Putting oneself in the patient's shoes
Healthcare System Constraints	Resource Limitations	Lack of medical supplies and Medicines Improvisation with limited resources Patient influx and lack of medical Equipment
	Personnel Shortage under Patient Surge	Managing multiple patients Simultaneously Lack of manpower Patient influx and lack of manpower
Demands of Trauma Care Settings	Managing high stress and chaos	Dealing with irate patient Dealing with combative patient Dealing with irate patient's relatives Patient's relatives are in denial ER work stress Fast-face transition "Magulo" (<i>chaotic</i>)
	Grappling Exhaustion	Work burnout "Pagod" (<i>tired</i>)

Note. P1-10: Participant 1-10

Theme 1: *'Psychological Burdens of Trauma Care'*

'Psychological Burdens of Trauma Care' is a theme that entails emotional and psychological burdens resulting from caring for trauma patients. This theme illustrates how witnessing traumatic events and the suffering of patients at the hospital had a psychological impact on the nurse's well-being. It demonstrates the intricate emotional path nurses must navigate daily in caring for patients, including the subthemes: 'Induced Fear', 'Self-doubt: The Weight

of Choices', and 'Feeling Helplessness Over Patients' Outcomes', as evident from the interpretations of the nurses' accounts.

Nurses in trauma care are managing a significant range of complex emotions, focusing on high-stress scenarios and extreme levels of patient suffering with the potential for poor outcomes for patients. These exposures can put them at risk of experiencing Secondary Traumatic Stress, where they tend to absorb the emotional pain of their patients.

Frequent exposure to patient trauma may also lead to increasing self-doubt and feelings of inadequacy over a period, especially in cases where a patient has had poor results. This leads to feelings of Impostor Phenomenon—nurses often feel inadequate and believe they need to prove themselves despite the fact that they have all the necessary skills and knowledge. As tough as IP may appear to be, it also acts as an excellent motivator for nurses to get better each and every day and aspire for excellence.

The cumulative impact of STS and IP could extend beyond the professional to enter a sphere that also affects one's personal life. However, the drive to overcome IP and improve could also push nurses to enhance their skills and reaffirm their commitment to providing high-quality care.

Subtheme 1: 'Induced Fear'

'Induced fear' is one of the significant psychological burdens that nurses must endure while working in trauma care. This subtheme describes what it was like experiencing the emotional toll of empathizing with patients and relating their experiences to one's own life. They wonder how it would feel if the tables were turned and nurses or their loved ones were the ones traumatized and in pain. As a result, empathy, crucial for delivering compassionate care to patients, can also be emotionally taxing.

For example, one nurse described how caring for patients who were in motorcycle accidents led to fear, given her own family members rode motorcycles. The nurse worried about her family's safety, especially since she was aware of the ramifications of riding carelessly. This fear was not limited to the clinical setting; it also overflowed into this nurse's emotions. She warned her relatives against reckless riding because she feared they would end up in a similar situation as her patients.

Nurses have the advantage/disadvantage of being able to empathize with their patients by putting themselves in the patient's shoes. Although empathy enables nurses to provide compassionate care to patients, it can also cause emotional exhaustion and heightened apprehensions. They are constantly worrying about the safety of themselves or their loved ones because they know just how much trauma everyday life is capable of inflicting.

One nurse, whose statement was translated, described how caring for patients involved in motorcycle accidents triggered a sense of fear, as she had family members who were also riders:

"Of course, once there are trauma patients, it's like you also put yourself in the situation. [...] So, every time that the patient is like that [patient had a motorcycle accident], I also feel fear, right? Because what if, right? [...] I'm afraid because, of course, mostly my family are riders. [...] It's like I put myself in their situation. So, it also affects my emotions." (Participant 4, female)

Subtheme 2: 'Self-doubt: The Weight of Choices'

Nurses designated to trauma care areas face a specific set of issues that could result in self-doubt. The critical actions and decisions rendered in a fast-paced environment, together with the responsibility that their actions will affect a patient's life, can create an overwhelming emotional strain.

The nurses who perform this essential work, demonstrating unwavering dedication, are providing excellent care in critical and often life-threatening and pressure-filled scenarios. Their commitment can leave them wondering if they did everything possible for each patient.

One nurse commented (translated):

"Sometimes I also think, yes, what did I do wrong? Why did it happen?" ... he added, "When there are times that I feel I made a mistake, meaning when you feel that you also lacked in your part." (Participant 1, male)

Subtheme 3: 'Feeling Helplessness Over Patients' Outcomes'

Nurses providing trauma care experience a sense of helplessness when faced with patients' outcomes that are beyond their control. This subtheme describes the consequent emotional distress on nurses when they are unable to play any role in changing their patients' recovery outcomes.

Nevertheless, regardless of their best efforts, they may encounter cases where a patient's injuries are too severe to survive medical treatment or cases in which a patient's ailment worsens even after they have done all that the patient needs. Nurses may, therefore, feel powerless and overwhelmed by the realization that they cannot alleviate suffering or save the lives of their patients. And those feelings can be even more overwhelming when they have formed relationships with patients and families. Grief, sadness, and a sense of personal failure may cause the nurses when their patient's outcome is less than optimal, regardless of whether it was outside their control.

Two nurses expressed feelings of helplessness and pity when caring for patients who were not responding to treatment, as evident in these translated excerpts:

"I see this, especially when they're old and struggling; it's like I can't do anything, and I don't know what to do..." (Participant 5, female)

"Personally, for me, there's a pity, as in pity is really the number one [concern] because, of course, all the medicines have been given, and you just feel pity that it's not effective to them" (Participant 4, female)

The subthemes 'Induced Fear', 'Self-doubt: The Weight of Choices,' and 'Feeling Helplessness Over Patients' Outcomes' are combined with the theme of 'Psychological Burdens of Trauma Care'. They reflect various aspects of psychological burdens nurses face while handling trauma patients, which in turn impact their mental health.

Theme 2: 'Healthcare System Constraints'

This theme is composed of challenges and difficulties nurses face in terms of the healthcare system while handling trauma patients. These constraints build barriers that limit nurses from providing the best quality care possible. The specific subthemes of 'Personnel Shortage Under Patient Surge' and 'Resource Limitations' highlight the struggles they experience in their daily work.

Subtheme 1: 'Resource Limitations'

Lack of essential medical supplies and equipment is one of the most challenging aspects encountered by nurses when caring for trauma patients. This subtheme reflects the frustration and challenge that nurses face as they are often unable to offer optimum care because of a lack of facility. Using whatever is at hand or improvising in such situations means the quality of care suffers.

As one nurse shared (translated):

"Of course, sometimes, especially in the ER, we don't know the influx of the patients. Sometimes many. We lack supplies... Lately, gloves, but more on medicines... Cervical collars are sometimes improvised, and sometimes we ask them to buy from outside" (Participant 1, male)

The quote shows how limited resources hinder the optimum aim of nurses in providing the best for their trauma patients. This often forces nurses to either improvise and find alternative solutions or have patients purchase items

with cash out of pocket, which results in further delays in accessing care and adds financial strain to patients and their families.

Subtheme 2: 'Personnel Shortage Under Patient Surge'

One of the significant challenges related to trauma care and nurses is that there are not enough personnel available in times of patient surges. This subtheme encompasses the nurses' struggles when they attend to many patients simultaneously. Without sufficient nurses, patients can expect less quality care as nurses cannot spend the needed time with each patient.

As one nurse stressed (translated):

"Honestly, we cannot give the maximum care that a patient needs because at any point while you're explaining to a patient, it gets hindered because you'll be called to a patient who is coding or arresting, so your interaction to the patient is interrupted" (Participant 6, male).

Another nurse exemplified (translated):

"But there's nothing we can do because there are so many patients, and the ratio of doctors and nurses can no longer handle it. But we still attend to them, but it's inadequate. Quality care is lost." (Participant 6, male).

The theme of 'Healthcare System Constraints' emerged collectively from the subthemes: 'Personnel Shortage Under Patient Surge' and 'Resource Limitations.' These constraints present significant barriers to nurses achieving optimum care provision to trauma patients. Without those supplies and equipment- without enough nurses to look after many patients requiring intensive care- the quality of care will be affected.

Theme 3: 'Demands of Trauma Care Settings'

The theme 'Demands of Trauma Care Settings' reflects the unique stressors and pressures present in these particular fast-paced, high-stress areas of care. Similarly, this theme is exemplified by the difficulty nurses face in operating effectively in high-pressure trauma cases and its impact on their mental well-being. More specifically, the following subthemes, 'Managing High Stress and Chaos' and 'Grappling with Exhaustion,' are intertwined with the trauma exposure revealed in nursing interviews.

Subtheme 1: 'Managing High Stress and Chaos'

Many of the demands that trauma care places on nurses also involve issues around high stress and chaos. This subtheme captures the difficulty experienced by nurses in dealing with agitated/combatative and their close relatives who, more often than not, might be feeling distress and rage. The rapid pace and chaos that characterize trauma care places added strain on nurses, as they must maneuver complex and emotionally fraught scenarios while still delivering quality care.

As one nurse noted (translated):

"Working and being assigned in the ER is stressful in itself. Of course, they arrive in pain." (Participant 1, male)

Another shared (translated):

"Sometimes, trauma patients are not in their right mind, quite combative. They're really combative; that's really our number one challenge, especially when they're going berserk, especially in motorcycle accidents. Of course, their head often suffers, so they're not in their right mind. They can't control their physical and emotional actions." (Participant 4, female).

Subtheme 2: 'Grappling with Exhaustion'

Trauma care settings also demand a great deal of exhaustion for nurses. This subtheme captures physical and emotional exhaustion due to the high volume of work, along with the intense nature of trauma cases. With the

many critical patients that nurses have to take care of and an overwhelming workload, it is no wonder nurses are prone to burnout and exhaustion.

As one nurse shared (translated):

"There are so many, but sometimes you think of changing jobs because it's exhausting, repetitive, and feels like it's just a routine." (Participant 6, male).

Another nurse commented (translated):

"Our usual challenge here is really exhaustion; we're stressed." (Participant 10, male)

The preceding quotes are examples of how the demanding nature of the environment in trauma care settings takes its toll on nurses' physical and emotional well-being. Because of the high number of patients, many of them get exhausted. The type of work involved can sometimes cause some nurses to re-evaluate their careers and even consider leaving the profession.

3.3 Explanatory Sequential-Analysis

The quantitative findings revealed that the sample's average STS and IP levels were 35.01 (with 29.7% of participants scoring above the cutoff) and 54.12 (with 26.1% of participants scoring above the cutoff), respectively. When integrated with the qualitative findings, this broadened the research context. The qualitative findings, particularly several subthemes under the theme of 'Psychological Burdens of Trauma Care,' corroborate with the quantitative outcomes of the study regarding STS and IP.

A key sub-theme was 'Induced Fear,' which illustrated the emotional burden of imagining patients' trauma as well as relating it to one's personal experiences. Nurses felt afraid, not only about what would happen to their patients but also about how their loved ones who might be at risk of experiencing the same traumas (relating patients' experiences to their loved ones with similar characteristics). This cycle of regular exposure to trauma and chronic emotional pain is a defining feature of STS, which is aligned with the quantitative results of the study about STS among nurses.

Another subtheme, 'Feeling Helplessness Over Patients' Outcomes,' was a source of emotional burden for nurses because there were situations where they were unable to change patients' outcomes. There were situations when the nurse felt helpless in a case of a patient's suffering and when there was no way to minimize these outcomes or prevent possible harmful consequences, although the nurse had done all that could be done. This sense of helplessness and the resulting emotional pain further contribute to the development of STS, consistent with the quantitative results of the study regarding STS among nurses.

The subtheme 'Self-doubt: The Weight of Choices' captured feelings related to inadequacy and self-doubt, characteristic of IP. Questioning oneself has been described, and some nurses tend to question themselves and think whether they have done enough or even done it the right way, especially when outcomes are not successful. The pressure of being in a fast-paced trauma environment, coupled with having to make critical actions and decisions that have an impact on patient's life, thereby underscoring the impact of self-doubt on nurses in such environments. On the other hand, a less severe IP could encourage betterment. Although self-questioning may be common in tough environments like trauma care settings, it can lead nurses to hone their skills and techniques, given the complex nature of such environments. This subtheme elucidates the quantitative findings of the study concerning IP among nurses.

The quantitative analysis demonstrated a significant positive relationship between STS and IP with $\beta=0.346$ at $p<0.001$. Thus, the findings mean that as STS becomes more severe, the experience of IP increases as well. Thus, this

means that the increased severity of STS is a predictor of increased experience of IP among nurses. However, the relationship doesn't necessarily imply causation.

These qualitative findings helped provide important insights, suggesting emotional and psychological mechanisms underpinning this predictive relationship between STS and IP. 'Psychological Burden of Trauma Care' was the main theme that conveyed the emotional and psychological toll nurses face while taking care of trauma patients. The theme also consisted of subthemes aligned to the context of STS, including 'Induced Fear,' 'Self-doubt: The Weight of Choices,' and 'Feeling Helplessness Over Patients' Outcomes.'

Nurses described the constant exposure to traumatic events and the resulting emotional distress, which can lead to the internalization of their patients' trauma (STS). Over time, this emotional burden can erode nurses' self-confidence and lead to persistent feelings of inadequacy and self-doubt, particularly when patient outcomes are unfavorable. These feelings of self-doubt and inadequacy are core characteristics of IP, suggesting that the psychological burdens of trauma care can create a fertile ground for the development of IP among nurses.

Additionally, the themes 'Healthcare System Constraints' and 'Demands of Trauma Care Settings' contributed to intensifying such psychological burdens among nurses in trauma care settings. The themes brought to light the problems that nurses have to face during their practice, such as lack of resources and personnel, stress overload, chaos everywhere, and enduring exhaustion. These systemic and environmental factors can compound emotional stress and self-doubt, making nurses more vulnerable to STS and IP.

For instance, nurses may be unable to meet the maximum quality of care for their patients due to limited resources and insufficient personnel. This state could contribute to feelings of guilt and inadequacy, further prompting nurses to question whether they have done enough. Likewise, the high levels of stress and heightened chaos of trauma care environments can create an environment where nurses are constantly pushed to their limits in terms of their capacity as nurses, emotionally and physically. In such a demanding, unpredictable environment that trauma care provides to patients and their families, it is even more challenging for nurses to cope with the emotional impact of their work.

In the quantitative results, it was found that demographics (sex and marital status) had moderating roles between STS and IP. It was revealed that the relationship between STS and IP was stronger among female nurses than it was among males ($\beta = -0.148$, $p = 0.037$) and weaker in married nurses compared to single nurses ($\beta = -0.165$, $P < 0.023$). From these results, it is indicated that both sex and marital status significantly moderated the relationship between STS and IP among nurses providing care in trauma care areas in a tertiary government hospital.

The stronger relationship between STS and IP among female, as opposed to male nurses, can be interpreted within the lens of the Secondary Traumatic Stress Theory (Figley, 1995), according to which empathy significantly increases vulnerability to emotional contagion from trauma victims. Numerous studies show women have a higher level of empathy compared to men (Pang et al., 2023; Nicklin, 2021; Baum, 2016; Mestre et al., 2009). It may be one of the reasons why female nurses are prone to experiencing the emotional impact of caring for trauma patients.

This interpretation is further supported by the qualitative findings displaying female nurses often describing the emotional toll of empathizing with their patients and reflecting on traumatic experiences in their own lives. As an example, one of the female nurses said she got worried and afraid after taking care of motorcycle accident patients because her family members were riders, and that worried her. Imagining oneself as the patient and thinking about how a traumatic experience could alter one's life is perhaps one of the aspects of empathy that increases susceptibility to STS.

Conversely, the weaker relationship between STS and IP for married nurses can be explained by the Ecological Theory of Trauma (Dutton & Rubinstein, 1995), which suggests that social support continues to attenuate trauma-

related outcomes. Marriage may give consistent and secure sources of emotional support and lesser susceptibility to experiencing STS in addition to IP.

Notwithstanding the absence of reference to marital status in the qualitative results concerning how marriage contributes to shaping nurses' experiences of STS and IP, some nurses made implicit references relating to social support as a resource enabling them to deal with the stress inherent in trauma care.

4. Conclusions

The study reveals the following conclusions; however, it's important to consider the limitations presented below when interpreting them:

1. The study included 138 nurses from trauma care areas of a tertiary government hospital in Metro Manila, with an almost equal male-female distribution. The mean age was 34.98 years, and the average length of clinical nursing experience was 7.25 years. The most significant proportion of nurses was single.
2. Nurses reported mild levels of STS on average, with about a third scoring above the cutoff, suggesting that STS is present in a notable proportion of nurses.
3. Nurses reported moderate levels of IP on average, with slightly more than a quarter scoring above the cutoff, indicating that IP is present for some nurses.
4. The study revealed a novel finding of a significant positive relationship between STS and IP among nurses working in trauma care areas of a tertiary government hospital in Metro Manila. This finding predicts that IP levels tend to increase as STS levels increase.
5. Sex characteristics and marital status were identified as significant moderators of the STS and IP relationship. The relationship was stronger for female nurses than for male nurses and weaker for married nurses than for single nurses. Additionally, age and length of nursing experience did not moderate the relationship between STS and IP.
6. Three main themes capturing the challenges nurses face in delivering care to trauma patients were illuminated through qualitative findings: (1) 'Psychological Burdens of Trauma Care,' (2) 'Healthcare System Constraints,' and (3) 'Demands of Trauma Care Settings.' These challenges are related to STS and IP among nurses. It comprises Theme One that describes emotional & psychological challenges in caring for trauma patients, which include induced fear, self-doubt, and feelings of helplessness, respectively aligning with STS & IP. In contrast, Theme Two focuses on the insufficiency of resources and staff shortages, whereas Theme Three highlights high stress, chaos, and exhaustion in the fast-paced trauma care environment, pressure, and burnout. Both Themes Two and Three exacerbate nurses' psychological burdens in trauma care, identified within Theme One.

Although the present study provides several insights into some Filipino nurses' experiences, it still has several limitations that could impact the generalization of the findings. These include the study's cross-sectional design, self-report measures (STSS and CIPS), the data taken from a single hospital, and the small sample size. Nevertheless, these limitations are acknowledged, and the research employs robust statistical methods. The STSS and CIPS's reliability coefficients are high, with $\alpha = .93$ and $.92$, respectively. According to researchers, the STSS is the only validated instrument designed to determine the presence and severity of STS in nurses (Watts & Robertson, 2015). On the other hand, the CIPS was also created to identify the nurses' achievements and reduce social desirability bias. As a result, the applicability of the findings of this study could be limited, but the fact that the given hospital is

a large referral center and a tertiary hospital in Metro Manila allows some generalized conclusions to be drawn for other hospitals in the country.

On the other hand, based on the study's findings, hospital administrators in the Philippines should integrate mental health practitioners, such as psychologists and psychometricians, into their hospital teams through direct hiring or third-party contracting to provide psychological services for their staff. Moreover, future studies should be conducted in several other study sites beyond this study's site, like both government and private hospitals. This could permit the risk profiling to be more detailed to understand the trajectory of STS and IP better and generalize the findings.

Acknowledgements: Great appreciation to Dr. Lucila Ortiz-Bance, Dr. Gian Carlo Torres and Sister Angelina Julom, PhD for thoroughly reviewing the paper. Thanks to Sir Ronald Venzon for assisting with data collection. Much gratitude to the participating nurses.

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