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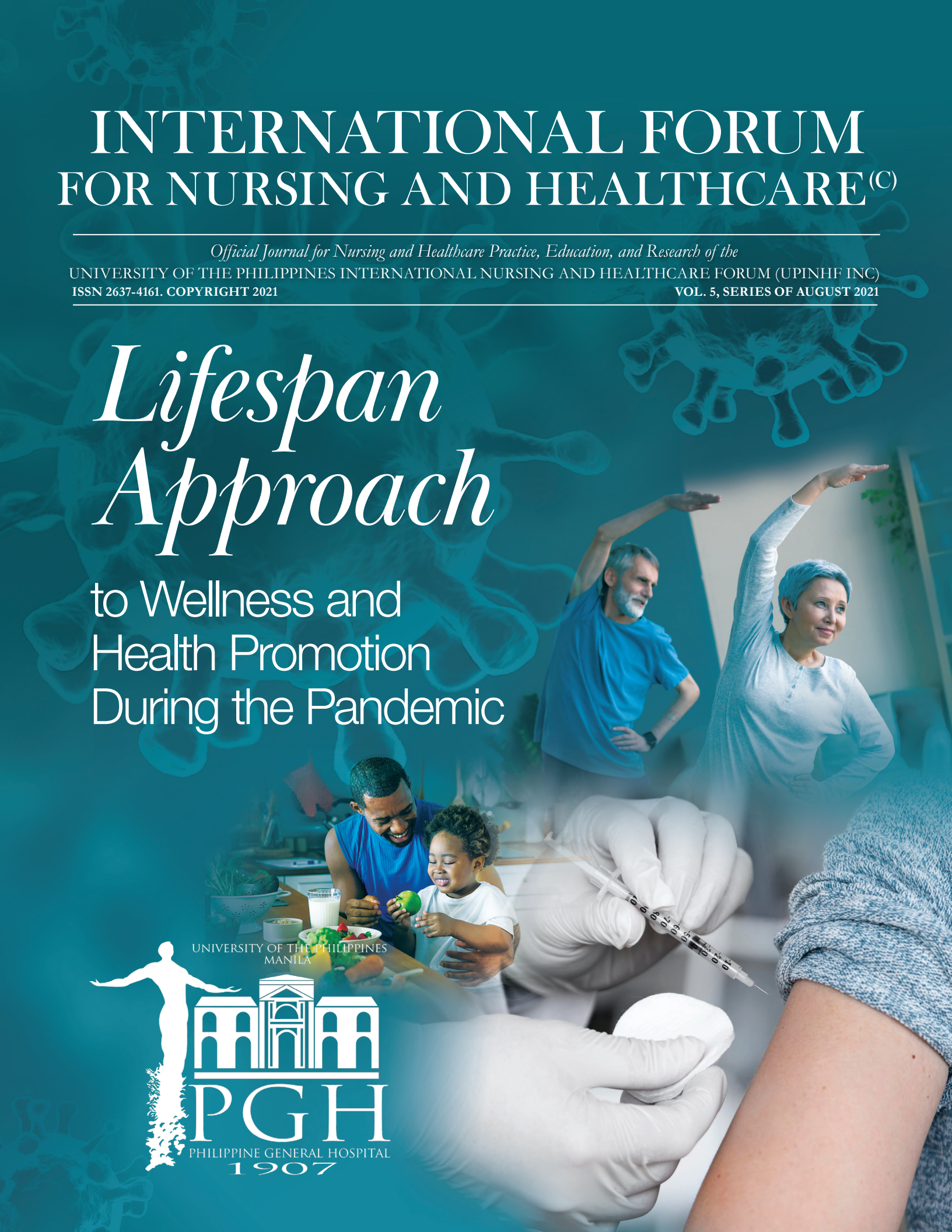
Lifespan Approach

to Wellness and Health Promotion During the Pandemic



UNIVERSITY OF THE PHILIPPINES MANILA
PGH
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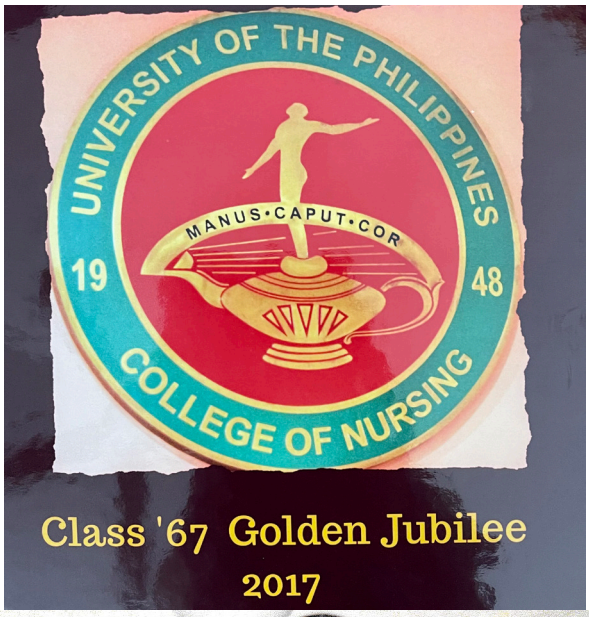
1907

The UPCN Class BSN 1967 Golden Jubilee Book brings back 50 years of memories and friendship. Thank you to Riz and Nadette for your generosity and creativity and to all our classmates who made this memento a possibility.



UPCN Class'67 Staying Magnificent

Songwriter, singer and Noble Prize winner Bob Dylan said, "Once upon a time, never comes again". So true. How could we not love to go back in time to reminisce and wish we could live exactly the way we were?

Homecomings, reunions reflect our inner desires to reconnect to those days gone by, with our youthful and innocent, seemingly daring and sometimes errant ways. Did we live each day with abandon or did we carefully measure each single step we took along the way?

Godie Lomotan Valenzuela

Love you all,

From,

Merle Flores Borrero, Connie Orillo Oliveros, Josephine Francisco Villanueva

Board of Directors UPINHF and IFNAH members of Editorial Board

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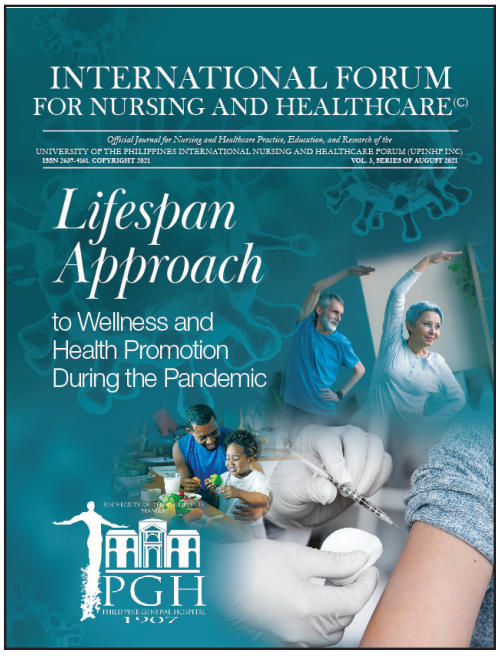
OUR COVER

By Nelson C. Borrero, UP Law '73
Editorial Consultant



The cover of this year's edition of the IFNAH Journal attempts to capture the UPINHF webinar theme: *Lifespan Approach to Wellness and Health Promotion During the Pandemic."* Differentiated from "longevity" and "life expectancy," "lifespan" is the number of years a person can live. Lifespan has many stages, *viz.,* infant, child, adolescent, adult and seniors. Each stage may require an appropriate approach to the pandemic.

"Wellness" is not only the absence of infirmity, it has to account physical wellbeing, intellectual and emotional wellness, including social and occupational fitness.

The aim of the theme is the promotion of individuals and communities to access nutrition with foods that enhance the immune system, and physical exercises that reduce sedentary time. All these can be achieved while complying to the shelter in place COVID strictures. One has to recognize that there are millions of cases and deaths all over the world. As the plague rages on, there were high hopes of deliverance with the many brands of vaccines that came to fore and the promise by many experts that once vaccinated people can get rid of their masks and social distancing would be the thing of the past, and the jabbing would lead to immunity. Unfortunately however, the experts are again advocating mask mandates even for vaccinated people, and even when indoors, including quarantines, and to some extent reinstating lockdowns, as if saying that the vaccines are ineffectual. The confusing guidance by the same experts is exacerbating the dire hesitancy of the unvaccinated to get the needle---they became disillusioned and very doubtful. Yet a decision has to be made. On this issue, the *"Quote of the Day"* (Inspirational Quotes, 8/3/21) lends a lot of significance:

"Every human being is the author of his own health or disease."
- BUDDHA

ABOUT UPINHF

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UPINHF is a chapter of UPAA and recognized as a U.P. alumni organization by the U.P. Board of Regents. The Organization as an entity is committed to, and its members are dedicated to support their beloved alma mater, UPCN and PGH.

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EDITORIAL

The Pandemic of Our Generation: Lessons Learned

An Editorial by: *Dr. Minerva S. Guttman, EdD, APN, RN*

As we emerge from the pandemic of our generation, I look back at what can be learned from these last 18 months. To write an editorial on a disaster implies a solution or at least some superior perspective, but I have neither, only what I trust are helpful insights.

As nurses, our experiences and burdens during the epidemic have been as diverse as the population we serve. For some, there were physical dangers while for others the risks were financial, psychological or even political. Some lost loved ones; others were hospitalized and had lingering symptoms of Covid-19. Some moved out of their homes to protect loved ones while others lost childcare or elder care and made difficult decisions to stay home. Some who were stricken with Covid-19 received support while others endured stigma. The pandemic made some ill physically, mentally or both, while others were grieving from losses of loved ones. Education had to be done virtually from elementary school to college, while nursing students went bravely to clinical experiences face-to- face, where and when clinical agencies allowed them.

Some unfortunate problems in society, nationwide and worldwide were glaringly exposed. Health and economic disparities based on race became more apparent during the pandemic. People, who have money and/or education, were able to get better treatments and/or hospitalizations first. When vaccinations became available, they got the first appointments because they had the technology to access the websites to schedule the appointments and the means of getting to their vaccination sites. Scientific facts and information about the pandemic were available to the moneyed and educated population, while the low income rung of society often just had access to false data and fake news. The sad reality is that this is happening not only in the United States, but also worldwide.

Amidst the chaos, there have been moments of hope and resilience. Nurses have emerged as healthcare heroes, celebrated in a new appreciation by colleagues in the healthcare team, patients and the public. There was also an emerging camaraderie as we saw physicians and healthcare professionals coming together as a team across specialties, across hospitals and even across time zones, as care givers from around the world shared experiences, innovations and research, to overcome the pandemic.

Vaccinations are now available to everyone who wants them. The unfortunate part is that vaccine hesitancy is still preventing us to reach

effective herd immunity not only because of limited access but because of false beliefs about the safety and efficacy of the vaccine. Even healthcare professionals, like some of the nurses from Texas in recent news, had to be fired because they refused the Covid 19 vaccination. Science and public safety have to prevail against half-baked notions. Vaccines have saved millions of lives over decades, centuries and past pandemics. The real but minimal risks have to be balanced against the demonstrated maximal rewards.

As we return to "normal", there are a multitude of questions for us to ask as a profession and as a society. What will we do with our new insights in healthcare, nursing practice and education, along with our fresh perspectives? How will we rebuild our new systems? Can we correct mistakes without being purely reactionary? Our new normal should be a <u>better</u> normal using what we learned from this tragic Covid-19 pandemic.

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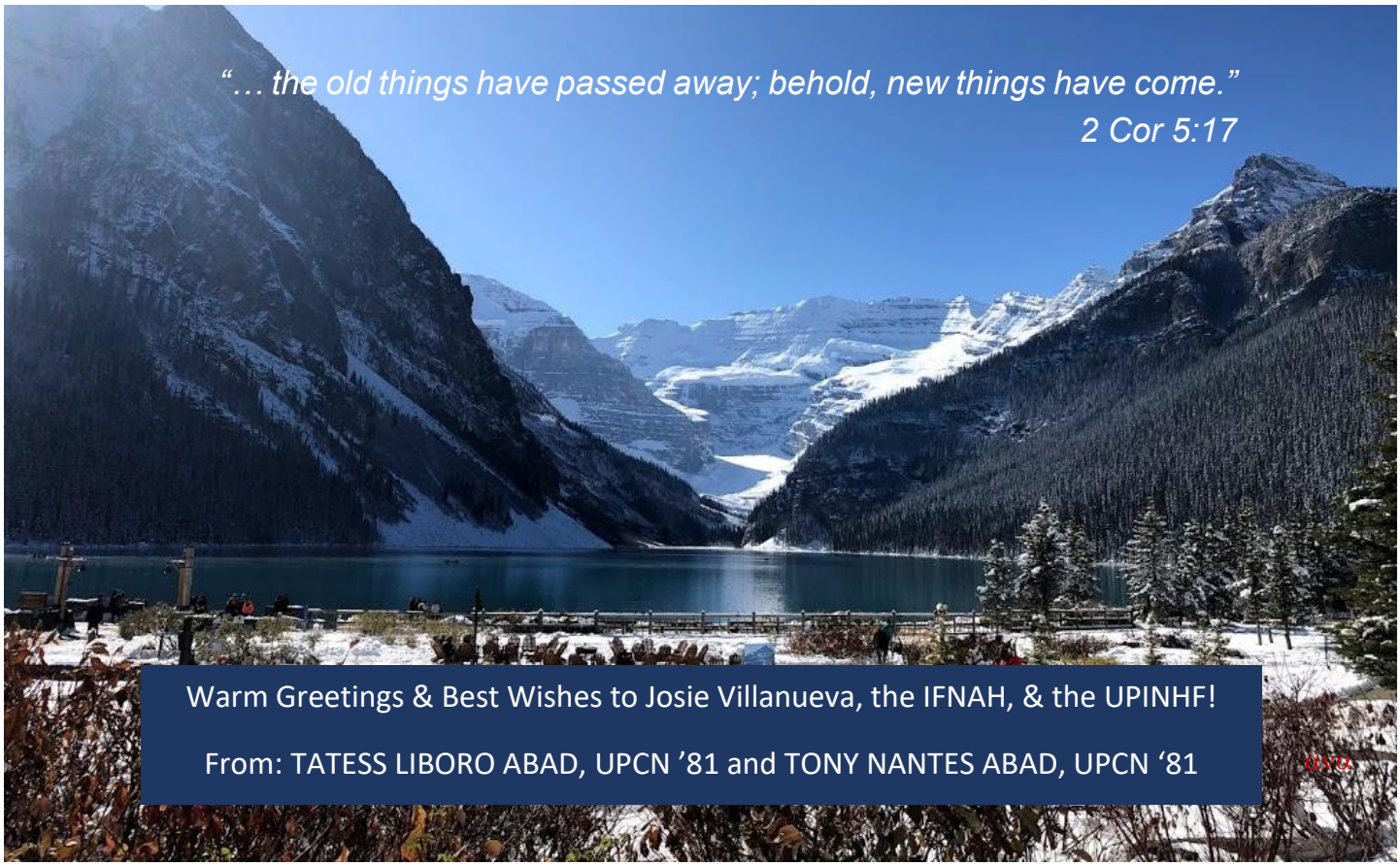
Chairman, Editorial Board

Minerva Salinas Guttman
EdD, APN, RN
Editor-In-Chief, Editorial Board



UPINHF
University of the Philippines
International Nursing and Healthcare Forum

UPINHF President's Message

Greetings!

On behalf of the members, officers, and board members, I congratulate the IFNAH Editorial Board for another successful year of publication. We appreciate the able leadership of Josie Villanueva and editor-in-chief Dr. Minerva Guttman. Thank you also to the authors of the manuscripts that are included in this edition. Kudos to all.

The IFNAH Journal's awarding of an ISSN by the United States Library of Congress confers credibility as a proper publication, which we seek to infuse with integrity and trustworthiness of through our peer reviewed process. The Journal adheres to the accepted standards for an international academic research publication. We trust that researchers and educators, as well as lay people, will learn from its pages, and that publication in it will help the authors obtain recognition for their efforts to enhance healthcare.

Despite of the pandemic that affected a lot of our lives, UPINHF persevered in our activities and initiatives while adapting to the times of uncertainty. The IFNAH Journal is an autonomous body within UPINHF, with its own funding and operations. We are gratified by its progress, to reach this issue, its fifth. Its obvious resilience and drive keep it dynamic and relevant.

UPINHF is focused and mindful of our Alma Mater, our Country and those less fortunate than us. We are also a professional organization and are glad that the Journal serves as one of the ways in which UPINHF fulfils its mission.

Bravo to another year of successful publication!

Best Regards,

Gloria Smitka, GN, RN
President, UPINHF

Call For Manuscripts

Submission Deadline: May 15, 2022

The INTERNATIONAL FORUM FOR NURSING AND HEALTHCARE (IFNAH), a peer-reviewed publication, is the official journal for nursing and healthcare practice, education, and research of the UNIVERSITY OF THE PHILIPPINES INTERNATIONAL NURSING AND HEALTHCARE FORUM (UPINHF INC). The IFNAH Editorial Board is currently accepting manuscript submissions. All submitted articles must be original, not under consideration for publication elsewhere, and have not been published before.

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Manuscripts MUST be submitted electronically as an e-mail attached MS-Word compatible document to the Editor-in-Chief (E-mail Address: ifnahjournal@upinhf.org) and the Chairman, Editorial Board (E-mail Address: chairman.ifnahjournal@upinhf.org)

Primary Care Provider Beliefs and Attitudes Toward Administering the Human Papillomavirus Vaccine to Unvaccinated Young Adults Ages 19-26: A Descriptive Study

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Abstract

The purpose of this comparative descriptive study was to describe the beliefs and attitudes of primary care providers toward administering the HPV vaccine to young adults ages 19-26 years old. The Theory of Planned Behavior served as the theoretical framework for the study. The survey instrument, used in 25 previous research studies on provider HPV vaccine beliefs and attitudes, was used with the permission of its developer. One hundred two participants comprised of physicians, physician assistants and nurse practitioners in primary care practices. Data was analyzed using descriptive statistics, the Chi-Square Test for Independence and the Kruskal-Wallis H Test. While there were no significant differences among the three provider groups found, there were findings of interest. Twenty percent of the group reported they provided primary care services to young adults ages 19-26 years old but did not administer the HPV vaccine. Gaps in HPV vaccine and disease knowledge were found among all three groups, which have the potential to affect vaccine compliance. Future studies with larger sample sizes are needed to determine effective strategies to increase HPV vaccination in young adults.

Introduction

Cancer is the second leading cause of death in the United States in both men and women. Though literature and evidence based practice have shown that the human papillomavirus (HPV) vaccine prevents cancer caused by infections and is widely available, vaccination rates remain low.

Infection with persistent HPV is the most important risk factor for cancers of the cervix, vagina, vulva, penis, throat, mouth and anus (Munoz et al, 2006). There are 150 strains of HPV, 40 of which are transmitted through skin-to-skin contact during vaginal, oral and anal sex. Human papillomavirus of the genital tract is the most common sexually transmitted disease in the United States. Indeed, almost every sexually active person will contract HPV during their lifetime. Most HPV infections are asymptomatic and about 90% will resolve within 2 years without treatment.

Immunity to HPV strains acquired through GARDASIL 9, the 9-valent HPV vaccine, would prevent many of these HPV-associated cancers (Veins, et al., 2016). Healthy People's 2020 goal is reach 80% vaccinated, however, only 41.6% of women and 10.1% of men ages 19–26 received at least one dose of the vaccine (Healthy People, 2016a; Williams 2t al., 2017).

There is evidence that provider beliefs and attitude about HPV supports the intent to vaccinate in the pre-teen and adolescent age groups. However, little is known about provider knowledge, attitudes and beliefs in vaccinating the 19–26 year old age group.

Background and Significance of the Problem

The Food and Drug Administration (FDA) approved the Quadrivalent Human Papillomavirus (Types 6, 11, 16, 18) Recombinant Vaccine, trade name GARDASIL, for use in the United States in females in 2006 and in males in 2009. The GARDASIL vaccine was developed for use in females and males ages 9 to 26. In women, GARDASIL is administered for the prevention of cancer and pre-cancers of the cervix, as well as pre-cancers of the vulva and vagina, caused by HPV strains 16 and 18. It also provides protection from genital warts and cervical lesions caused by HPV strains 6, 11 and 16. In men, GARDASIL provides protection from genital warts caused by HPV strains 6 and 11, and anal cancer and precancerous lesions due to HPV 6, 11, 16 and 18. The vaccine is administered via intramuscular injection. A two-dose series is administered six months apart for children less than 15 years of age. For males and females 15 years and older, a three-dose series is administered over six months. The first dose is followed by dose 2, 1–2 months later, and dose 3, 6 months after the first dose (FDA, 2018b).

The HPV vaccine is part of the routine immunization panel, along with Tdap, Influenza, and MenACWY that should be recommended by primary healthcare providers for administration to girls and boys ages 11–12. The HPV vaccine can be administered to children as young as nine if deemed appropriate by the provider (CDC, 2018b). Providers to young women up to age 26 can administer the HPV vaccine as a catch-up vaccine, either to those who did not receive the vaccine or who did not complete the vaccine series. The HPV vaccine can be administered as a catch-up vaccine to young men up to age 21 and to young men up to age 26 who have sex with men, who either never received the vaccine or failed to complete the vaccine series (CDC, 2017a). The HPV vaccine is recommended for administration to adolescents and young adults even after the initiation of sexual activity. In the sexually active, the vaccine provides immunity to those of the 9 strains of HPV covered by GARDASIL 9 for which exposure has not yet taken place. The benefit of developing immunity to at least some of the HPV strains supports this immunization recommendation (Markowitz et al., 2014).

There are 79 million Americans infected with HPV, with 14 million new infections occurring annually (Scatter-

white et al., 2013). By the age of 45, 80% of all men and women will have had an HPV infection and half of all new infections occur in 15–24-year-olds (Chesson, Dunne, Hariri, & Markowitz, 2014). In the United States, HPV-associated cancers account for 3% of all cancers in women and 2% of all cancers in men (National Cancer Institute, 2020). The most common cancer-causing HPV stains are 16, 18, 31, 33, 45, 52, and 58. From 2012–2016, 34,800 HPV-associated cancer cases were diagnosed annually in the United States. Females account for 20,700 of the cases and males for 14,100 of the cases. The HPV-associated cancer with the highest incidence is cervical in women and oropharyngeal in men. During 2012–2016, 10,900 cases of cancer of the cervix and 13,500 cases of oropharyngeal cancer were diagnosed annually(CDC, 2019b).

The 2016 cancer rates from the Centers from Disease Control and Prevention are the most up to date cancer statistics available. In that year, 120,000 women were living with cervical cancer in the United States. Between 2012 and 2016, 63,477 new cases were diagnosed, and 20,739 women died. Thirty-eight percent of the women diagnosed with cervical cancer are under the age of 35.The highest prevalence is found in the 40-49 age group. The overall five-year survival rate is 67.8%, with a 5-year survival rate for white women of 69% and for black women of 57% (Howlander et al., 2019). The median age of death is 57 (National Cancer Institute, 2017). A persistent infection with an HPV strain can be attributed to 91% of cervical cancer cases (Saraiya et al., 2015). It is projected that a 100% HPV vaccination rate would result in a 63% reduction in the incidence of cervical cancer and a 49% reduction in cervical cancer mortality by the year 2050 (Durham, et al., 2018).

The most common site of HPV-associated cancer in men is the oral cavity and pharynx. In 2016, 193,000 men were living with oral and pharyngeal cancer, with 32,611 new cases diagnosed and 7,150 deaths from the disease annually. The overall five-year survival rate in men is 60.8% with a 61.5% in whites and 40.9% in blacks (U.S. Cancer Statistics Working Group, 2019). The number of new cases of cancer of the oral cavity and pharynx increased by 0.7% every year from 2005–2015 (Noone et al., 2018). Over 70% of oral and pharyngeal cancers are due to persistent infection with HPV, and the incidence of HPV-associated oropharyngeal cancers in United States increased by 225% between 1988 and 2004. If current trends continue, it will surpass cervical cancer rates by 2020 (Chaturvedi et al., 2011).

The estimated overall direct medical cost for the prevention and treatment of HPV in the United States, in 2010 dollars, is 8.0 billion dollars annually.HPV is the second most expensive sexually transmitted infection in the United States. The annual direct medical cost of cervical cancer is 400 million dollars and oropharyngeal cancer is 300 million dollars (Chesson et al., 2014). Cancer has the highest probability of causing impairment, and results in the most loss of work time of all chronic diseases. HPV-associated cancers result in loss of productivity and premature death. It is estimated that an HPV-associated cancer causes an average of 21.8 years in lost life, and that HPV related cancers result in $3.6 billion annually in lost work force productivity in the United States (Ekwueme, Chesson, Zhang, & Balamurugan, 2008).

Purpose

The purpose of this comparative descriptive study was to identify similarities and differences in beliefs, attitudes and current practices regarding the HPV vaccine and intention to vaccinate young men and women 19–26 years old, between primary care physicians, physician assistants and nurse practitioners.

Research Question

What are the similarities and differences in attitudes, beliefs and current practices regarding the HPV vaccine and intention to vaccinate young men and women 19–26 years old, between primary care physicians, physician assistants and nurse practitioners?

Theoretical Framework

The Theory of Planned Behavior (TPB) was the conceptual framework of this study. The foundation of the TPB is that behavioral achievement is dependent upon both an individual's motivation and their ability to perform a behavior (Ajzen, 1991).

The TPB believes performing a behavior is dependent upon an individual's intention and ability. The theory is defined by six constructs: attitudes, behavioral intention, subjective norms, societal norms, perceived power, and perceived behavioral control. Attitude is influenced by one's belief, whether positive or negative, about the expected outcome of the behavior. Behavioral intention is influenced by subjective and societal norms in which the stated behavior is thought of either positively or negatively by

peers and the larger society. Perceived power and perceived behavioral control are influenced by the individual's belief in their ability to perform the intended behavior, and factors outside the control of the individual that impact their ability (Ajzen, 1991).

The TPB has been used to predict and understand health related behaviors of both the patient and the practitioner. The TPB was utilized in this study to describe the attitudes and beliefs of the primary care provider regarding providing the HPV vaccine to clients 19–26 years old.

Review of Literature

A cross-sectional study by Rutten et al. (2017) examined clinician knowledge of HPV infection and HPV vaccination and perceived barriers to providing the vaccine. A sample of 280 primary care providers comprised of physicians, nurse practitioners and physician assistants completed the Hearing Physician Views–HPV Immunization National Trends Survey, which assesses knowledge and barriers to providing vaccines including HPV. HPV vaccine series initiation ranged from 11%–43% and completion ranged from 2.4%–27%, in the individual clinic sites in the health care system where the practitioners worked.

A relationship between knowledge level and vaccination rate was found. Higher HPV knowledge was linked with higher vaccination rates. Vaccine initiation and completion rates increased with increasing provider knowledge. Increased provider perceived parental barriers to vaccine acceptance resulted in decreased initiation and completion rates. Perceived barriers included lack of parental understanding of the vaccine, parents' request to defer initiation of the vaccine until a later age, and parents' belief that their child was not at risk for contracting an HPV infection. The study matched individual provider vaccine data with responses and included non-physician providers in the study sample, but the study design did not allow a causal relationship to be made between provider beliefs and attitudes and vaccine rates (Rutten et al., 2017).

In a qualitative study by Perkins and Clark (2012), the factors that providers viewed as either supporting or impeding their provision of the HPV vaccine to females 11–26 years old were explored, during a semi-structured interview of thirty-four pediatricians, family medicine physicians and nurse practitioners. Providers were asked about their attitudes about HPV vaccination, their beliefs about parents' willingness to have their child vaccinated and the system issues they perceived impeded vaccination.

Self-reported rates of study participants for offering the vaccine ranged from 25% to 95% of the 11–26 year old female patients in their practice. Understanding providers' personal beliefs is a critical component to understanding providers' behavior in offering the HPV vaccine to patients. Factors associated with positive support of the vaccine were the belief that the vaccine is safe, professional guidelines support its use, HPV is an important infection to combat, and that providing vaccines to children is an important part of their role as a health care provider. Factors associated with negative support for the vaccine were the belief that the vaccine is not safe, it is not a required vaccine for school attendance, it can be deferred for administration at a later age, HPV is not an important health threat since cervical cancer is slow growing and can be detected through PAP smear, and a discomfort with discussing an adolescence's sexual activity with parents.

A cross-sectional survey of 227 nurse practitioners, family physicians, gynecologists and physician assistants by McCave (2010) looked at factors that affect a provider's intent to recommend the HPV vaccine to females. The Theory of Planned Behavior was utilized as the underpinning of the survey questions.

The author began by examining vaccine practices and found that HPV vaccine rates were significantly higher for female ages 13–17 than ages 9–12, and that providers who had high vaccination rates in 13–17 year-old had high vaccination rates in 9–12 year-old. The provider's personal belief in the positive impact of the HPV vaccine was the most frequently reported factor that supported recommending the vaccine. This was followed in frequency by comfort in discussing sexual activity of adolescents with parents and the existence of guidelines from professional organizations on HPV vaccine administration. Perceived barriers by providers to vaccinate were parents having a negative view of the vaccine, and parents' belief their child was too young to be sexually active so therefore did not need the vaccine. Providers who reported on more perceived barriers to HPV vaccine had lower vaccination rates in both age groups. The Theory of Planned Behavior served as the framework for the development of the survey instrument. It was piloted for face-validity and determined to have sufficient internal reliability using Cronbach's alpha coefficient. This being the initial use of the survey instrument and the absence of construct validity are limitations to the study (McCave, 2010).

A qualitative systematic review by Rosen, Shepard, and Kahn (2018) synthesized research on provider knowledge and beliefs about HPV infection and vaccine, and attitudes and beliefs about recommending the HPV vaccine. The review included 48 quantitative and 12 qualitative studies, and study participants included pediatricians, family practitioners, OB/GYNs, general practitioners, nurse practitioners, internal medicine physicians, preventive medicine physicians, physician assistants, registered nurses, and school nurses. Two independent reviewers analyzed articles for themes and subthemes.

Practitioners generally believed that HPV infection and its associated cancer risks was a serious issue and that a vaccine to prevent HPV infection was warranted. Barriers to recommending the HPV vaccine included lower HPV and HPV vaccine knowledge, and personal concerns about the safety and efficacy of the vaccine and duration of immunity. Provider knowledge about HPV disease and vaccine for males was lower than for females especially in the areas of male upper age vaccine recommendations, male related HPV cancers and HPV infection risk in men who have sex with men. Provider associated facilitators to HPV vaccine included higher knowledge of HPV and HPV vaccine and the belief that the vaccine is safe and effective.

A qualitative systematic review by Leung, Akinwunmi, Elias, and Feldman (2019) synthesized studies on knowledge, attitudes and beliefs of health care providers surrounding the HPV, to identify gaps in knowledge and to synthesize studies of interventions to increase provider knowledge. Thirty descriptive studies consisting of 21 surveys, 4 qualitative studies and 5 mixed-method studies that explored provider HPV and HPV vaccine knowledge, self-efficacy and

beliefs were included in the review. The framework for the review was based in meta-ethnography, a method for synthesizing qualitative studies.

Provider knowledge level on the prevalence of HPV associated cancers was low especially in the areas of penile, oropharyngeal, anal and vulvar. Providers' self-efficacy and confidence in addressing parental vaccine concerns and ability to convince parents to accept the vaccine were positively associated with recommending the vaccine. The personal attitudes of providers about the HPV vaccine influences intention to vaccinate, with a positive attitude making intention to recommend the vaccine to females more likely. The wide range of HPV vaccine knowledge among providers recommending the vaccine is a barrier. Many of the studies in the review were cross-sectional and utilized convenience samples with self-reported data limiting the results (Leung, Akinwunmi, Elias, & Feldman, 2019).

In their integrative literature review, Vollrath, Thul, and Holcombe (2018) found that when identifying similarities among missed opportunities to vaccinate, lack of provider recommendation was a factor. The literature review included 9 systematic reviews, 14 qualitative studies and 14 quantitative studies.

The authors found significance in findings that support the impact provider recommendation had on increasing vaccination rates and improving parental attitudes regarding the HPV vaccine. The odds of vaccine uptake following receiving a provider recommendation range widely from a low of 5 times as likely to a high of 18 times as likely to be vaccinated, when compared to adolescents whose parents did not receive a vaccine recommendation from a provider. Reasons identified across studies that were associated with a parent's decision not to vaccinate included lack of provider recommendation for the vaccine, concerns about the safety of the vaccine, and uncertainty about need for the vaccine and lack of knowledge about the vaccine (Vollrath, Thul, & Holcombe, 2018).

In a study by Berkowitz, Malone, Rodriquez, and Saraiya (2012) vaccination recommendations for women 18–26 were examined. The investigators used data from DocSyles, a CDC annual survey of randomly selected providers that collects data on attitudes and practices regarding different health issues, to conduct the study. The study examined the beliefs about HPV vaccine for females 18–26-years-old, of 1,753 primary care providers including obstetricians/gynecologists, nurse practitioners, pediatricians, internists and family medicine/general practitioners.

There was a recommendation rate of 9.4% across all specialties for women 18–26 years old. Vaccine recommendations rates varied widely by provider specialty. Internist at 18% had the highest percentage of practitioners reporting recommending the vaccine, and pediatricians had the lowest at 1%. Pediatricians in this study had the highest percentage for recommending the vaccine to 11–12-year-old, the age for vaccination that clinical guidelines from professional organizations recommend, which may in part impact their recommendation practices to 18–26-year-old. The study utilized a recognized web-based survey of providers with a large sample size and mix of provider type. The study is limited by only including provider recommendation practices for females (Berkowitz, Malone, Rodriquez, & Saraiya, 2012).

Gerund, Shepard, Lustria, and Shepard (2016) in a cross-sectional study looked to understand provider recommendation of HPV to young men and women. Two hundred and twenty-three 18–26-year-old were recruited through Craigs list to participate in the study, 67 of whom were men and 156 were women.

Forty-five percent of the respondents had received at least one dose of the vaccine. Seventy-five percent of the group that was vaccinated had completed the vaccine series. In the area of provider recommendation, 53% responded that they had received a recommendation for the HPV vaccine. The group that received a provider recommendation for the vaccine was 35% more likely to have received at least one dose of the vaccine, when compared with the group that reported to have not received a vaccine recommendation from a provider (unadjusted OR=35.61, Wald=71.73, 95% CI=15.58-81.40).

The researchers found that women were 10 times more likely than men to receive an HPV vaccine recommendation. When age as a factor in receiving a recommendation was examined, the 18–21 year old age group of men and women combined was more likely to receive a recommendation than the 22–26 year old age group. Sixty-eight percent of 18–21-year-old reported receiving a recommendation as compared to 46% of 22–26-year-old. Reliance on self-reported responses from volunteer participants is a limitation of this study (Gerend, Shepard, Lustria, & Shepard, 2016).

In a quantitative study of 19–26 year old women, Rosenthal, Weiss, Zimmer, Good, and Vichnin (2011) found a relationship between provider recommendation and receiving the HPV vaccine. A cross-sectional survey was conducted with 567 women, of which 345 had received the HPV vaccine when they were between the ages of 19–26, and 185 were unvaccinated. The study examined attitudes about vaccines in general and specifically about the HPV vaccine. Responses between groups were compared.

The majority of women who had been vaccinated against HPV reported discussing the HPV vaccine and receiving a recommendation from a provider for the vaccine. Either the majority of the respondents who were non-vaccinated never discussed the vaccine with a provider or if they had discussed the vaccine with a provider, the discussion did not include a recommendation to receive the vaccine. The two factors of provider discussion and provider recommendation when combined increased the likelihood of receiving the initial dose of the vaccine by 93 fold (Rosenthal, Weiss, Zimet, Good, & Vichin, 2011).

Strength of recommendation was found to positively affect decision to vaccinate in women 19–26 years old. The women who reported discussing the HPV vaccine and receiving a recommendation from the provider to vaccinate were asked to rate the strength of the recommendation on a Likert rating scale. Each one-point increase in the rating of the recommendation on the Likert scale resulted in a 41% increase (OR 1.41, 95% CI 1.06-1.88) in the likelihood that a woman had initiated the vaccine series. As limitations, only females with health insurance were eligible to participate in the study, and responses to the survey were self-reported with potential for recall-bias (Rosenthal et al., 2011).

Gerend, Madkins, Phillips, and Mustanski (2016) looked at predictors of HPV vaccine acceptance in men ages 18–26 who identify as having sex with

men, a recognized risk factor for HPV infection and disease. Three hundred and forty-two men participated in the study by completing an on-line survey that sought to identify facilitators and barriers to HPV vaccine acceptance in this population. The HPV Vaccination framework, used to identify factors that support vaccine uptake, the Theory of Planned Behavior and the Health Belief Model served as the foundation for the survey tool.

Of the 342 men, 24% reported receiving a provider recommendation to have the HPV vaccine and 21% reported being vaccinated with a least one dose of the HPV vaccine. Receiving a provider recommendation for HPV vaccination was the strongest predictor of vaccine acceptance. When unvaccinated study participants were asked to rate the top three barriers to being vaccinated, lack of provider recommendation was the highest reported barrier. The study also looked at factors common to participants who received a provider recommendation. Men who were HIV positive, had a prior history of an HPV infection, self-identified as "other", or reported having unprotected sex were more likely to receive a provider recommendation. The survey tool is grounded in theory, but no validity or reliability data was provided. Study participants were volunteers recruited from a dating web site and responses were self-reported. All of which are limitations of the study (Gerend, Madkins, Phillips, & Mustanski, 2016).

In conclusion, a relationship exists between provider beliefs and attitudes about HPV disease and vaccine, and knowledge level about HPV disease and vaccine, and provider vaccine practices. The more knowledgeable a provider is about the vaccine and the seriousness of HPV disease, and the more favorably the provider's attitudes and beliefs, the greater the likelihood that they will recommend the vaccine. These factors-influenced the strength of the vaccine recommendation given. The stronger the vaccine recommendation given, the greater the likelihood that the vaccine HPV vaccine series will be initiated.

Methodology and Implementation

A comparative descriptive study was conducted using a 22-question survey instrument, to gather information about primary care practitioners' beliefs and attitudes about the HPV vaccine and their intention to vaccinate 19–26 year old men and women. The study design consisted of a self-administered web-based survey completed by primary care practitioners who reported that they care for 19–26 year old men and women.

Qualtrics, the market research firm maintains a panel of healthcare providers for the purposes of conducting healthcare provider related research. A convenience of physicians, nurse practitioners, and physician assistants from this panel received an email invitation from Qualtrics to participate in the survey. Qualtrics continued to elicit participation via email invitation until a sample of 100 primary care practitioners who care for young adults 19-26 years old completed the survey.

The survey tool, Survey on Human Papillomavirus (HPV) Vaccination, was adapted from a survey instrument developed by Dr. Matthew Daley (Daley et al., 2010). It had been used in four published studies (Daley, et al., 2006; Daley et al., 2010; Soon et al., 2015; White, Waldrop, & Waldrop, 2016) to assess provider knowledge, attitudes and beliefs and intention to vaccinate with the HPV vaccine. Permission to use the survey tool, with adaptations for use in the 19–26 year old population, was given by Dr. Daley. The survey instrument is short and can be completed in 10 minutes. All of the questions require checking a box with the exception of question 11, which allows the respondent to add a reason not already listed in the provider response options for why patients defer or refuse the HPV vaccine. The instructions in the email to providers highlighted this as a way of encouraging survey responses. Dr. Daley reports that formal reliability and validity analyses were not conducted during the survey instrument development. However, a number of the survey items are from previously validated instruments, and the instrument in some form has been used in over 25 studies by researchers Allison Kempe, MD, MPH and Lori Crane, PhD, MPH, in their work on understanding physician vaccine behaviors.

The survey consists of twenty-two questions. Provider attitudes and beliefs about the HPV vaccine were assessed using 5-point Likert scales (strongly agree to strongly disagree) in questions 1 and 9. Strength of provider recommendation was assessed using a 4-point Likert scale (strongly recommend to do not recommend) in question 4. Ten statements on HPV and HPV vaccination with true, false or do not know as responses options, were used to assess provider knowledge in question 3. Questions 5, 7, 8, 10, and 13 were used to address whether the provider administers HPV vaccine in their practice. Time spent discussing the vaccine with a young adult, percentage of young adults who refuse or defer the vaccine when offered, practice strategies used to ensure that a patient completes the 3-dose series, and difficulties in obtaining the HPV vaccine for administration to insured patients were also included. Questions 15–17 were used to describe practice characteristics including payor mix, percentage of practice that young adults comprise and the racial/ethnic makeup of patients. Gender, years in practice, and licensure (MD/DO, PA, and NP) was collected.

The survey instrument was distributed via the internet using the web-based survey service Qualtrics. Survey respondents were assigned at random by Qualtrics under which their responses were collected. Survey responses were recorded on an excel spreadsheet by Qualtrics. Survey responses were collected from the date of the initial survey email until a sample of 100 was achieved. This took approximately 2 weeks.

Results

The quota of 100 survey respondents was set in advance of the release of the survey and was equally distributed among the three categories of primary care practitioners, MD/DO, PA and NP. Two hundred and thirty-five practitioners responded to the Qualtrics email invitation to participate in the survey. The final panel numbered 102 and was distributed among the three professions MD/DO (n=35), PA (n=34), and NP (n=33).

Demographics

Table 1 summarizes the demographic characteristics of the survey participants by profession. The majority of survey participants were female (n=62, 60.7%). For gender by profession, the majority of PAs and NPs were female (n= 25, 73.5% and n=28, 84.8%) respectively, while the majority of MD/DOs were male (n=26, 74.3%). In the area of primary care practice specialty, for all professions combined, the majority of the survey partici-

Table 1

Demographic Characteristics by Profession

	MD/DO N(%)	PA N(%)	NP N(%)	Total N(%)
Gender				
Male	26 (74.3)	9 (26.5)	5 (15.2)	40 (39.2)
Female	9 (25.7)	25 (73.5)	28 (84.8)	62 (60.8)
Total	35(100.0)	34(100.0)	33(100.0)	102 (100)
Specialty				
Family/General	9 (25.7)	31 (91.2)	29 (87.9)	69 (67.6)
Pediatrics	2 (5.7)	3(8.8)	2(6.1)	7 (6.9)
Internal Medicine	24 (68.6)	-	-	24 (23.5)
Women's Health	-	-	2(6.1)	2 (2.0)
Number of years In practice				
0-4	3 (8.6)	2 (5.9)	5 (15.2)	10 (9.8)
5-10	3 (8.6)	10 (29.4)	11 (33.3)	24 (23.6)
11-20	7 (20.0)	13 (38.2)	10 30.3)	30 (29.4)
20+	22 (62.9)	9 (26.5)	7 (21.2)	38 (37.2)
Percentage of patients ages19-26 in their practice				
1-9%	9 (25.7)	3 (8.8)	6 (18.2)	18 (17.6)
10-24%	12 (34.3)	10 (29.4)	13 (39.4)	35 (34.3)
25-49%	8 (22.8)	19 (55.9)	8 (24.2)	35 (34.3)
50-74%	2 (5.7)	1 (2.9)	4 (12.1)	7 (6.9)
75-100%	4 (11.4)	1 (2.9)	2 (6.0)	7 (6.9)
Current HPV vaccine recommendation for ages 19-26				
Do not recommend	2 (5.7)	0 (0.0)	0 (0.0)	2 (2.0)
Recommend, not strongly	4 (11.4)	5 (14.7)	8 (24.2)	17 (16.6)
Strongly recommend	29 (82.9)	29 (85.3)	25 (75.8)	83 (81.4)
Currently administers HPV vaccine in their practice				
Yes	25 (71.4)	26 (78.8)	30 (88.2)	81 (79.4)
No	10 (28.6)	7 (21.2)	4 (11.8)	21 (20.6)

Table 2

Provider Beliefs and Attitudes	Strongly Agree/ Somewhat Agree	Strongly Disagree/ Somewhat Disagree	Strongly Agree/ Somewhat Agree	Strongly Disagree/ Somewhat Disagree	Strongly Agree/ Somewhat Agree	Strongly Disagree/ Somewhat Disagree	
	MD/DO N (%)		PA N (%)		NP N (%)		
It is hard to establish continuity of care with young adult patients.	21 (60.0)	14 (40.0)	24 (70.6)	10 (29.4)	22 (66.6)	11 (33.3)	.644
I feel comfortable discussing issues of sexuality with my young adult patients.	29 (82.9)	6 (17.1)	29(85.3)	5(14.7)	29(87.9)	4(12.1)	.843
My young adult patients do not want to discuss issues of sexuality with me.	17 (48.6)	18 (51.4)	12 (35.3)	22 (64.7)	9 (27.3)	23 (69.7)	.267
When seeing young adults for health care visits, I routinely inquire about sexual activity.	25 (71.4)	9(25.7)	29 (85.3)	5 (14.7)	29(87.9)	4 (12.1)	.330
When I see a young adult, I am usually aware of whether or not the patient has become sexually active.	22 (62.9)	6 (17.1)	22 (64.7)	10 (29.4)	25 (75.8)	7 (21.2)	.322
Young adults are coming in for preventive health visits in order to receive the HPV vaccine.	13 (37.1)	11 (31.4)	12 (35.3)	20 (58.8)	16 (48.5)	15 (45.5)	.717
It is necessary to discuss issues of sexuality prior to recommending HPV vaccine to patients.	20 (80.0)	5 (20.0)	19 (63.3)	11 (36.7)	14 (53.8)	11 (42.3)	.520
Other vaccine recommendations for young adults have made it easier for my practice to introduce HPV vaccine.	20 (80.0)	3 (23.0)	24 (80.0)	4(13.3)	22 (84.6)	2 (7.7)	.345
I think that vaccination against a sexually transmitted infection may encourage earlier or riskier sexual behavior in my young adult patients.	6 (24.0)	19 (76.0)	4 (13.3)	26 (86.7)	4 (15.4)	20 (76.9)	.368

Table 3 *Provider Knowledge*

	Correct Response				
	MD/DO N(%)	PA N(%)	NP N (%)	X^2(df)	p
HPV is a relatively uncommon sexually transmitted disease	31(88.6)	29(85.3)	30(90.9)	.206(2)	.902
Almost all-cervical cancer is caused by HPV infection.	26(74.3)	30(88.2)	30(90.9)	3.835(2)	.147
The incidence of HPV in women is highest among women in their 30s.	4(11.4)	9(26.5)	8(24.2)	1.942(2)	.379
Most people with genital HPV infections are symptomatic.	26(74.3)	24(70.6)	29(87.9)	2.057(2)	.358
Genital warts are caused by the same HPV types as that cause cervical cancer.	17(48.6)	17(50.0)	10(30.3)	.402(2)	.818
Sexually active women should be tested for HPV before starting the HPV vaccine.	19(54.3)	22(64.7)	18(54.5)	.191(2)	.909
A pregnancy test should be performed prior to giving HPV vaccine.	19(54.3)	20(58.8)	20(60.6)	.407(2)	.816
HPV is not licensed for females older than 26 years of age.	15(42.9)	15(44.1)	16(48.5)	2.199(2)	.333
Women and men who have been diagnosed with HPV should not be given the same HPV vaccine.	23(65.7)	26(76.5)	21(63.6)	1.703(2)	.427
HPV vaccination is highly effective at preventing cervical cancer precursors.	33(94.3)	31(91.2)	33(100.0)	2.869(2)	.238
Median Correct Response Score	11.0	11.0	11.0	.788(2)	.674

pants reported being in Family/General Practices (n=69, 67.6%). For primary care practice specialty by profession, the majority of PAs (n=31, 91.2%) and NPs (n=29, 87.9%) worked in a Family/General Medicine practice. The majority of the MD/DO group worked in an Internal Medicine Practice (n=24, 68.6%). For number of years in practice, the majority of MD/DOs (n=22, 68.6%) reported 20+ years' experience. The highest percentage of PAs (n=13, 38.2%) were in the category of 11-20 years of experience. The highest percentage of NPs (n=11, 33.3%) had 5-10 years of experience.

Physician assistants had the highest percentage of clients in this age group. PAs (n=19, 55.9%) reported that 25-49% percent of their clients were ages 19-26. The largest number of NPs (n=11, 33.3%) reported that between 10-24% of their clients were in this age group. The largest number of MD/DO (n=12, 34.3%) also reported 10-24% of clients. Respondents were asked about HPV vaccine administration in their practice. The MD/DO group (n=10, 28.6%) had the highest percentage of practitioners reporting to not currently administering the vaccine, followed by PAs (n=7, 21.2%), and NPs (n=4, 11.8%).

For strength of vaccine recommendation during discussion of the HPV, a majority of the respondents from the three groups, MD/DO (n=29, 82.9%), PAs (n=29, 85.3%), NPs (n=25, 75.8%), reported to strongly recommend the vaccine to young adults ages 19-26.

Table 2 summarizes the respondents' beliefs and attitudes by professional group regarding the HPV vaccine. Provider beliefs and attitudes were assessed using Likert scale responses of strongly agree, somewhat agree, somewhat disagree, and strongly disagree, to nine HPV vaccine related statements. The strongly agree and somewhat agree responses by profession were combined as well as the strongly disagree and somewhat disagree responses to the nine statements, in order that the sample size of responses would be large enough to conduct a chi-square analysis. The Chi-Square Test for Independence for each of the nine statements did not support ($p>.05$) that the strongly agree/somewhat agree responses to the nine HPV related statements differed at a statistically significant level from the strongly disagree/somewhat disagree, across the MD/DO, PA and NP groups.

Table 3 summarizes the HPV knowledge difference of the MD/DO, PA and NP groups. A Kruskall Wallis test was

used to analyze the difference among the groups.

Evaluation

The Theory of Planned Behavior (TPB), as the conceptual framework for this study, was used to understand the health related behaviors of the practitioner. The TPB believes that performing a behavior is dependent upon the individual's intention and ability. Practitioner attitudes and beliefs are linked as attitudes are influenced by one's beliefs (Ajzen, 1991).

Analysis of the survey findings failed to demonstrate significant differences between MD/DOs, PAs and NPs in their HPV beliefs and attitudes, HPV knowledge, and in strength of recommendation of the HPV vaccine to ages 19-26 years. However, there were findings of interest. The literature review supports that provider beliefs and attitudes about HPV and HPV impacts vaccine practice. The literature review also supports that the more knowledgeable a provider is about the HPV vaccine, the greater the likelihood that they will recommend the vaccine. These results are of interest considering the HPV vaccine is now supposed to be presented as a cancer prevention vaccine as opposed to a vaccine against a sexually transmitted disease, as it had been in the past. HPV 16 and HPV 18 cause cervical cancer.

The other finding of interest was whether HPV vaccine is currently administered in a provider's practice. All of the survey participants were primary care practitioners who provided care to young adults ages 19-26. Even so, 28.6% of the MD/DOs, 21.2% of the PAs and 11.8% of the NPs reported to not currently administering the HPV vaccine in their practice. The literature shows providers' concerns about the financial burden on the practice setting of inadequate reimbursement for the HPV vaccine, as well as the financial burden of the vaccine on under insured or uninsured patients, as barriers to providing the HPV vaccine (McCave, 2010).

Limitations

There are a number of limitations to the study. The small sample size limits the ability to generalize the findings. Study participants were drawn from a panel of health care providers maintained by Qualtrics for the purposes of health care research. It is unknown whether the study participants possess specific characteristics that make them more likely to be study participants, and therefore different from the general population of primary care practitioners. Responses to the questionnaire were self-reported and not validated with an independent source, such as office records. The survey instrument has been used in 25 studies on the HPV vaccine, but the validity and reliability of the questions in the survey instrument were not established when it was developed. This would also limit the findings.

Recommendations and Implications

The Healthy People 2020 target goal for HPV vaccine coverage is 80% (Healthy People, 2016a, 2016b).Vaccine rates for 19–26-year-old who never received the vaccine are only 8.6% in women and 2.7% in men (CDC, 2018b). Efforts need to be focused on increasing the uptake of HPV vaccine by young adults. The interventions that have been found to be most effective in increasing HPV vaccine uptake are evidence-based and provider training focused (Gilkey et al, 2019). Provider focused evidence-based efforts to increase the provision of HPV vaccination in non-pediatric primary care practices are needed.

This study showed that for this sample group, there existed a deficit in provider knowledge of HPV disease and HPV vaccine across all three-provider groups. Higher HPV vaccine knowledge is associated with higher vaccination rates (Rutten et al, 2017; Rosen, Shepard, & Kahn, 2018; Leung et al, 2019). The area of provider HPV education of primary care providers must be increased using the wealth of information and educational materials available. Studies are needed that evaluate provider HPV educational materials and education strategies to determine the ones most effective in increasing vaccine uptake (Leung et al, 2019).

Mandating the HPV vaccine would increase vaccination compliance in the United States. However, the Issues of cost, safety, parental right to refuse, and moral objections to a vaccine against a sexually transmitted disease have complicated mandatory vaccine policy initiatives.

Pharmacists are allowed to administer HPV vaccine in 48 states and the District of Columbia and Puerto Rico (NCSL, 2010). The oldest age to which they can administer the HPV vaccine is 18. Policy efforts focused on increasing the allowable age for pharmacists to vaccinate to age 26, would increase access to the vaccine for young adults aged 19-26.

There is a paucity of provider-focused research on HPV vaccination of young adults ages 19-26 years old. Replicating a study like this one with a much larger sample size is needed to develop a broader understanding of provider vaccine behavior in this age group.

The under vaccination of young adults that this study seeks to address by understanding provider beliefs and attitudes, would not exist if efforts to vaccinate boys and girls ages 11-12, the target population for the HPV vaccine, were effective. Vaccine hesitancy is a public health problem in the United States. It is at the forefront of many health care providers' consciousness, especially those in primary care. This showed that providers' knowledge, beliefs and attitude are important factors in increasing HPV vaccine compliance. The results may help in overcoming the current Covid-19 vaccine hesitancy in the country.

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Nursing Education During a Pandemic

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Introduction

The coronavirus disease 2019 (COVID-19) pandemic exerted a significant impact on nursing education as colleges and universities closed their doors to the majority of face-to-face education and transitioned to online education. Clinical nursing education in health care facilities was disrupted and schools of nursing were tasked to create innovative and interactive ways to engage and provide clinical education for students. While most universities reverted to synchronous virtual education, clinical nursing education proved to be a challenge for faculty and students, to ensure students achieved learning outcomes. Virtual teaching may be an appropriate solution to disrupting face-to-face classes because online teaching guides student learning (Mian & Khan, 2020). Experts imagined that transitioning to online education is challenging but rewarding (Esani, 2010). In recent years, some medical schools moved from traditional forms of in person lecture-based education to other methods using online, distance or electronic learning (Moran, Briscoe & Peglow, 2018).

Online education may be adequate for preclinical nursing students, however nursing students in clinical courses require and benefit from patient contact. The nursing process of assessment, diagnosis, implementation and evaluation is best achieved through patient contact. Communicating with patients and assessment of patients are essential for learning and building clinical and critical thinking skills (Mian & Khan, 2020). However, nursing schools are faced with challenges that inhibit the face-to-face clinical learning environment, such as shortage of faculty, limited clinical placements and the current pandemic (American Association of Colleges of Nursing [AACN], 2020). Schools of Nursing should consider using different approaches of facilitating learning during a pandemic to preserve student engagement and interactivity (Mian & Khan, 2020). It is essential to identify challenges that may impact student learning in an online environment to assist in recognizing online teaching and learning practices that would enhance education (Rajab, Gazal, & Alkattan, 2020).

Challenges Teaching Nursing During Pandemic

Online teaching and learning posed a challenge during the COVID-19 pandemic. It required significant changes in the way faculty deliver nursing education and faculty and students had to adjust quickly to the teaching-learning environment. The emergency virtual teaching during the pandemic is temporary (Hodges, Moore, Lockee, Trust & Bond, 2020), nevertheless, online education requires more reflective and structured approaches which are necessary for a successful and permanent virtual nursing education (Morin, 2020). The change to offer synchronous or asynchronous online nursing education featured several issues related to online education. Online education may not be the same as face-to-face teaching, relating to access and quality of teaching. However, others are of the notion that online education is equally effective as traditional face-to-face education (Read, 2020). Faculty were faced with engaging students in active learning, avoiding distractions and fatigue. Many experienced falling back into the less desirable method of depositing education into passively listening students. Additionally, the shift to online education also required changes in the grading system (Jackson et al., 2020). While some schools maintained the grading system with letter grades other schools altered their grading to pass/fail (Morin, 2020). In nursing education this is not sustainable because Pass/Fail grading does not reflect student excellence on the grade point average.

The pandemic highlighted challenges that impacted students' ability to learn and achieve learning outcomes. Students who lived at home might not have access to the Internet or WiFi and may not have access to laptops at home (Morin, 2020; Rajab et al., 2020) especially if they have to share computers with other members of the family. Students experienced barriers such as difficulty navigating the online education environment and minimal experience with online education (Rajab et al., 2020). Also, nursing students in Canada expressed concerns about the possibility of not reaching career goals (Dewart, Corcoran, Thirsk, & Petrovic, 2020). Anxiety and stress related to the pandemic might also impact the teaching-learning environment (Rajab et al., 2020). One study noted that medical students were not happy with the online classroom and preferred the traditional face-to-face education (Rajab et al., 2020). Faculty might also be concerned or might not be confident in maneuvering the online classroom (Rosen & Weil, 1995). The current challenges facing academia as a result of the pandemic calls for faculty to demonstrate leadership in curriculum development, implementation and evaluation.

Nursing schools had to quickly move to virtual clinical experience (VCE), extended prebriefing and debriefing sessions to supplement clinical teaching. Not all clinical agencies supported student clinical experiences; availability of personal protective equipment was a challenge for the agencies. Hospitals required fewer nursing students for clini-

cal instruction which required schools of nursing to alter clinical education, and offer weekly virtual clinical for students who could not be at the hospital. Thus, most current students have had minimal hours of face-to-face clinical experiences which may impact their clinical skills as well as critical thinking abilities as they transition to professional life.

Simulation, VCE, and reflective practice have long been identified as effective clinical teaching strategies that engage the learner as an active participant however, implementing these practices have been less desirable due to the increased time, manpower and workload they create for faculty (National League of Nursing [NLN], 2015). Unfortunately, not all institutions have the needed technology and resources to provide necessary resources for students (Morin, 2020). Additionally, nurse faculty may not be savvy with the use of the resources. Institutions of higher education play a vital role in creating an environment that provides support for faculty to intentionally design clinical rotations with these strategies as the priority over face-to face clinical interaction.

Recommendations for Achieving Student Learning Outcomes During a Pandemic

The pandemic has presented nursing institutions with an opportunity to effectively use contemporary pedagogy such as simulation, VCEs and reflective learning to enhance student engagement and meet clinical performance expectations. Challenges in clinical education have resulted in increased use of simulation, telehealth and virtual reality (AACN, 2020; Morin, 2020). Incorporating more simulation in nursing education could be the key in supplementing clinical education. Simulation, virtual patients and other forms of learning have evolved as pedagogical strategies to facilitate an active, learner-centered teaching approach (Moran et al., 2018). Limitations experienced by nursing students related to virtual education require increased sensitivity of nursing faculty as they implement virtual education (Morin, 2020).

Students are provided opportunities to practice clinical decision-making skills through simulation (AACN, 2020). A shift to online education requires support of students with access to current technology and resources, and nursing faculty by making necessary resources and real-time support available to faculty (Rajab et al., 2020). Communication between faculty and students must be clear and concise in a virtual teaching environment (Rajab et al., 2020). Also, students in the virtual classroom need constant feedback and clarifications on difficult concepts which can be very time consuming for nursing faculty (Esani, 2010). Furthermore, faculty must re-examine their teaching practices to enhance learning (Rajab et al., 2020).

The AACN (2020) recommended maintaining academic program require-

ments regarding credits and clinical hours as much as possible, planning for the potential lack of student access to computers and the Internet and, ensuring web access for all students. Additionally, using strategies such as recorded classes or lectures and live class meetings are vital; also, supporting diversity, equity and inclusion initiatives to ensure student engagement throughout the pandemic (AACN, 2020). To engage students in a long lecture environment faculty can offer breaks every 50 minutes and facilitate discussions and questions and answers throughout the lecture period.

A standard approach to validating learning outcomes will be useful to address the education-practice gap (Lewallen & Van Horn, 2019). Institutions will need to examine the current clinical evaluation methods. The current evaluation tools will not fit the new hybrid model of clinical experience for baccalaureate nursing education during the public health crisis. This is further supported by the NLN's research priority of examination and use of technology, simulation, informatics, and virtual experiences on student learning affecting clinical practice (NLN, 2015). Clinical evaluation of undergraduate nursing education has been based on competencies once accomplished as a result of face-to-face clinical interactions with patients, families and members of the health care team. In the current education climate, clinical evaluation needs to be flexible and adjust to the changing pedagogy for clinical education.

Finally, institutions must remain vigilant of the emotional and mental health challenges that pandemics may create on faculty, students and staff and ensure appropriate resources are available for all who need support (AACN, 2020). It is not possible for students and faculty to be successful in the teaching-learning environment without support (AACN, 2020).

Conclusion

It is the responsibility of institutions of nursing and nursing faculty to ensure nursing students achieve learning outcomes during a pandemic. Faculty are obligated to produce a nursing workforce that is competent and efficient in meeting the complex health care needs of patients. Thus, it is imperative that institutions provide an education that prepares nurses to be effective caregivers regardless of threats of pandemics. Nursing schools should consider other modes of teaching to prevent disruption of achieving clinical learning outcomes. Ongoing innovative efforts are necessary to enhance the teaching-learning experience, and appropriate strategies have to be in place for nursing students to maintain clinical skills and knowledge. Student engagement, faculty innovation and institution support are key in addressing a changing healthcare environment due to the pandemic and beyond. This opportunity for innovation in the delivery and evaluation of clinical education creates a need for faculty development that empowers faculty to lead these initiatives. Finally, as students graduate in the era of a pandemic with minimal onsite clinical experiences, employers expect them to perform at the minimum entry level, nevertheless, managers of health care agencies have to be prepared to provide additional clinical training during orientation of new nurses.

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Exploring the Impact of Preparation on Student Anxiety during Simulation

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Abstract

Anxiety can affect simulation performance. While many researchers have denoted the impact of anxiety on performance, little research has been conducted regarding the role of preparation on anxiety in simulation-based experiences. The purpose of this pre-test/post-test study was to explore the impact of simulation preparation in regard to the state anxiety experienced by students during a simulation exercise.

Twelve first semester senior nursing students were assigned to either an intervention group or comparison group. Both groups received the Spielberger et al.'s (1983) State-Trait Anxiety Inventory (STAI) before and after participating in a face-to-face simulation experience. One week prior to the in-person simulation, the intervention group (n = 6) received the virtual simulation for the purpose of preparation. Both groups participated in the same in-person, face-to-face simulation and engaged in a focused debriefing session. Using the STAI, the pre-test and post-test results of the two groups were compared to explore differences in anxiety rates. Although there were slight mean differences, the results did not support the research question under study that students who are engaged in pre-simulation preparation report decreased levels of anxiety as compared to students who do not engage in pre-simulation preparation. The findings cannot be generalized because of the small sample size and lack of randomization. Further research is needed.

Introduction

College students are anxious for a variety of reasons (Brown, 2015). Many students arrive to campus pre-loaded with stressors, which are caused by previous academic pressures (at earlier ages), overprotective parents, compulsive engagement with social media, etc. (Brown, 2015). Furthermore, the demands of college life exacerbate existing mental health issues. While experiencing anxiety is considered a normal part of the developmental spectrum, treating anxiety has become an overwhelming challenge for college counseling centers nationwide (Hoffman, 2015). Baccalaureate nursing curricula consist of theory and practicum. As more clinical sites are getting more limited, nursing programs have turned to simulation to augment learning the clinical skills. This has put additional anxiety on the nursing student.

High levels of anxiety may have a detrimental impact on learning. Anxiety can negatively impact attention, memory processing, decision-making skills, and task performance (Derakshan & Eysenck, 2009)

Significance of the Problem

Like college students in other fields of study, it is not uncommon for nursing students to experience the predictable anxiety that comes with rigorous curricula and high stakes testing. Simulation can cause various levels of anxiety in nursing students, which include fear of being observed, learning styles, fear of making mistakes, etc. (Beischel, 2013). Yet, the nursing field requires that students partake in high-fidelity simulations, which is inherently valuable for many reasons. Students can care for patients in a safe practice setting that they cannot in other hospital settings (Aebersold, 2018). While there are benefits associated with high-fidelity simulations, these simulations can cause considerable anxiety (Hsieh, 2013).

According to Gantt (2013), there are various reasons why nursing education programs rely on simulations. Specifically, McNeal (2010) noted that augmented clinical experiences can combat nursing faculty shortages, can result in shortened length of patient stays, and can supplement customary clinical learning experiences. While these advances in technology and instructional strategies have created opportunities for students to apply their learning to real world scenarios, researchers have noted that simulations often result in feelings of anxiety, inadequacy, or incompetence post-simulation (Garrett, 2013; Leighton& Scholl, 2009).

Greenberg (2004) noted that anxiety evokes the fight or flight response. Often, due to anxiety, individuals have intense physiological responses and heightened arousal, which can interfere with performance. Shipton (2002) noted that students expressed increased anxiety when demonstrating basic skills (e.g., medication administration, dressing changes, foley catheterizations, etc.). Furthermore, students also cited that they felt anxiety during situations that involve staff nurses and faculty who they perceived to be critical and/or unsupportive (Shipton, 2002).

Mental health problems have both individual and institutional consequences (Hoffman, 2015). Given the emergence of anxiety, as the prevailing mental health concern on college campuses, understanding the nature of anxiety, what triggers anxiety, and the impact anxiety has on student performance is essential to facilitate balanced and responsive learning environments. Unmanaged student anxiety poses serious problems in terms of retention and persistence, which can result in significant financial losses for students and institutions. Researchers have noted colleges save money by providing mental/emotional health support for students (Hoffman, 2015.) Eisenberg, Golberstein, and Hunt (2009) cited that in terms of tuition alone, it is estimated that

delivering treatment to 100 depressed/anxious students in a single year could result in six avoided dropouts, which is equivalent to an average of $240,000 in tuition.

Conceptual Framework

Anxiety, which is conceptualized as an aversive emotional state triggered by a threatening circumstance, is often associated with diminished cognitive performance (Eysenck et al., 2007). The processing efficiency theory, which was developed by Eysenck and Calvo (1992), distinguishes between effectiveness, or the quality of performance on a task, and efficiency, which refers to the amount of effort and resources required to effectively meet behavioral standards. Effectiveness refers to the quality of task performance while efficiency refers to the relationship between performance and the resources utilized to attain a certain performance level (Eysenck et al., 2007).

One major assumption of processing efficiency theory is that worry is the component of state anxiety that is responsible for the negative impact on performance effectiveness and efficiency because it interferes with working memory and the ability to access and manipulate information in short term storage. Worrisome thoughts can interfere with processing and storage functions, which can burden one's executive function capabilities (e.g., planning and strategizing capacity; Eysenck et al., 2007).

Attentional control theory expands upon processing efficiency theory, specifically elaborating on the role of attention in the context of anxiety and cognitive performance (Eysenck et al., 2007). Specifically, attentional control theory assumes that as anxiety increases (in the form of worrisome thoughts and negative self-talk), one's attention narrows. Due to increased anxiety, attention is placed on the most threatening stimulus, which causes worry to take over, thereby diminishing one's performance. Corbetta and Schulman (2002) distinguished between the stimulus-driven, bottom-up attentional system and the goal-oriented, top-down attentional system, and attentional control theory posits that anxiety disrupts the balance between the two. As anxiety increases, the stimulus-driven system (i.e., worry) gains the upper hand and the individual focuses on minimizing and escaping the anxiety.

According to attentional control theory, efficiency is impaired to a greater degree than effectiveness (Eysenck et al., 2007). High anxiety levels can result in low performance levels. It may be possible to meet behavioral standards, but it may take longer to do so and may require more additional resources. Anxiety reduces an individual's ability to control his/her focus of attention and diverts one's resource processing to task-irrelevant stimuli as opposed to task-relevant stimuli (Eysenck et al., 2007). When an individual's stimuli are threatened, this is very problematic, because one's working memory is not able to entirely absorb information and task shifting becomes increasingly difficult.

Purpose Statement

The purpose of this pre-test/post-test study was to explore the impact of simulation preparation in regard to the state anxiety experienced by students during a simulation exercise.

Research Question

Do students who are engaged in pre-simulation preparation report decreased levels of anxiety as compared to students who do not engage in pre-simulation preparation?

Definition of Variables

State Anxiety

Conceptual Definition: The term state anxiety references a disinterested/aversive emotional state that exists at a given moment in time and is reflective of a particular level of intensity. Anxiety states are characterized by subjective feelings of tension, apprehension, nervousness, and worry. Furthermore, anxiety states impact the activation or arousal of an individual's autonomic nervous system (Spielberger et al., 1983).

Operational Definition: State anxiety refers to a student's subjective feelings within a specific setting (e.g., clinical or simulation-based). In this study, state anxiety is marked by a student's inability to make appropriate decisions about patient care. State anxiety scores were measured using the State-Trait Anxiety Inventory (STAI).

Simulation

Conceptual Definition: The term simulation references a situation that is constructed to resemble an actual clinical practice setting in as close of a manner as possible (Rauen, 2004).

Operational Definition: In nursing education programs, simulations are utilized as a teaching strategy to create "realistic" healthcare situations (Jeffries, 2007). In a safe practice environment, students can perform scenarios that are similar to those encountered during nursing care. Simulations allow students to develop cognitive, affective, and psychomotor skills and to improve their critical thinking processes without compromising patient outcomes. In nursing education, simulation experiences include prebriefings, scenarios, and debriefings.

Pre-Simulation Preparation

Conceptual Definition: Pre-simulation preparation references content or

material that is provided to the learner before a simulation experience (Leigh, 2018; Tyerman, Luctkar-Flude, Graham, Coffey, & Olsen-Lynch, 2019).

Operational Definition: For the purpose of this study, a virtual simulation was used as a pre-simulation preparation. The Wolters Kluwer Lippincott vSim for Nursing is a vSim web-based technology that allows students to engage with patients and receive feedback about their performance. The vSim that was selected for this study detailed a case of a five-year-old female who had mild intermittent asthma symptoms and was sent to the emergency room for further evaluation. Based upon the case information provided, students were expected to perform a general assessment, to recognize mild to moderate respiratory distress symptoms, and to administer necessary medication(s). Additionally, students were asked to identify asthma triggers and interventions.

Review of Literature

Simulation is an instructional method that is used in nursing education programs to promote cognitive, psychomotor, and affective learning among students (Hicks et al., 2009; Jeffries, 2007; Schoening, Sittner, & Todd, 2006). A longitudinal study, which was conducted by the National Council of State Boards of Nursing (NCSBN, 2014), revealed a growing interest in clinical simulation among top U.S. nursing education programs. In many nursing programs, throughout all 50 states, simulation-based education is not only being used as a teaching strategy but also serves as a replacement for traditional clinical hours. The survey results gathered from the 1,060 pre-licensure nursing programs indicated that 87% of these programs utilized simulation. Furthermore, of those 87% of programs, more than half of the programs indicated integrating simulation in clinical-based courses.

Sinclair and Ferguson (2009) explored the impact of simulation on self-confidence and perceptions of self-efficacy among nursing students. In their study, which included 250 second year nursing students, a mixed methodology was utilized to explore if the combination of simulation and lecture would improve self-confidence and self-efficacy. Members of the control group were only exposed to lecture, while members of the experimental group were exposed to the simulation and lecture. To gather data, students completed a demographic questionnaire and the Baccalaureate Nursing Student Teaching-Learning Self Efficacy Questionnaire. Additionally, members of the experimental group were also asked to complete a reflective review of their learning experience after the simulation concluded. Sinclair and Ferguson (2009) found that self-confidence among students increased through the use of the simulation. While there were many positive attributes of this study, one limitation was that participants were not randomly assigned to the simulation group versus experimental group. Instead, participants could select their group according to scheduling availability. Therefore, the rate of questionnaire responses among students was lower since students did not complete their questionnaire in a timely manner.

While simulations are being used as a teaching strategy more so than in years before, this strategy can evoke feelings of stress and anxiety among nursing students. Students have reported experiencing increased anxiety levels when completing simulations that involve even the most basic of skills (e.g., medication administration, dressing changes, and foley catheterizations. Furthermore, anxiety levels among students increase when they are required to partake in simulations that they are not comfortable performing as well as fear of making mistake (Erickson Megel et al., 2012; Jarzemsky& McGrath, 2008; Sun, Long, Tseng, Huang, You, & Chaing, 2016).

Cordeau (2010) conducted a qualitative research study to explore the lived experiences of 19 novice, first-year nursing students. During this study, all student participants were partaking in their first clinical simulation, which was graded by the student's instructor. The simulation was carried out in a clinical simulation lab that consisted of an acute care hospital room and a control room. Students were separated from the simulation assessor by one-way glass which allowed the instructor to observe the student. Using the checklist and rubric developed by Cordeau (2010), students were graded on their ability to carry out necessary tasks. All students were assigned either a "pass" or "fail" score based upon their ability to effectively carry out the requirements set forth. Upon the completion of this study, Cordeau (2010) noted five themes: (1) perceived anxiety (e.g., pre-simulation, beginning, intermittent, continuous, debriefing), (2) seeking and imagining (e.g., seeking knowledge and imagining themselves in the situation), (3) performing in the moment (e.g.,perceived fidelity, cueing, nursing interventions), (4) critiquing performance (e.g., debriefing), and (5) performing for nursing practice (e.g., reflection and implementation). Of the 19 students who engaged in this project, approximately 10% of students needed to repeat the simulation since they received a "fail" score. Additionally, Cordeau (2010) noted that the graded clinical simulation likely added to anxiety levels among students. It is important to note that Jeffries' (2007) nursing education simulation framework was used in this study; however, this framework did not address the meaning of the students' experiences, because as it was tested through quantitative methods.

In a quantitative experimental study, which was conducted by Gore, Hunt, Parker, and Raines (2011), state anxiety levels among two groups of junior level nursing students were compared. Gore et al.'s (2011) study took place in a mock-hospital unit where students were assigned to care for a simulated patient over a four-hour period. Students were split into two groups (e.g., an experimental group and a control group). Members of the experimental group partook in a pre-simulation mock experience and members of the control group began their inpatient clinical experience without the pre-simulation experience. To assess state anxiety levels, the STAI was utilized. Students who partook in the pre-simulation experience noted lower levels of anxiety than those in the control group. This finding was statistically significant ($p = 0.01$), as the experimental group's STAI mean score was 11.0 (±2.8) and the control group STAI mean score was 13 (±3.4). One of the major limitations of this study was that convenience sample participants were demographically similar, thereby limiting the generalizability of the results (e.g., to other nursing students, in different programs, in other geographic regions).

There is limited evidence that supports that simulations can decrease student anxiety levels. Furthermore, little research has been conducted to examine low levels of anxiety and success in

simulation. Hollenbach (2016) evaluated clinical anxiety levels before, after, and prior to simulation experiences. In this study, 68 nursing students (e.g., one cohort of 32 and one cohort of 36) completed the STAI prior to the simulation. After the completion of the simulation, all nursing students completed a questionnaire, which was designed by the PI. The post-simulation questionnaire utilized an eight- Likert-type scale questions. In addition to the eight questions, one open ended question was included that assessed student impressions of the workshop on preparation for the clinical experience. The overall purpose of this questionnaire was to evaluate feelings about the impact of the workshop that occurred before the simulation.

The reliability and validity of the evaluation questionnaire were not reported. Both cohorts of students had higher than normal state anxiety scores prior to the simulation and prior to clinical experiences ($p = 0.0001$). In the first cohort, anxiety levels were unchanged ($p= 0.241$). In the second cohort, anxiety levels were higher post-simulation as compared to pre-simulation anxiety levels ($p= 0.015$). One of the limitations of this study is that it was unclear if any students had an anxiety diagnosis (before the study's implementation), as this diagnosis could impact overall study-related scores.

In a mixed method study, which was carried out by Beischel's (2013), the impact of anxiety on simulation-based learning outcomes was explored. One hundred and thirty nursing students completed two questionnaires and a qualitative open-ended questionnaire about anxiety levels. The findings of the study indicated that eating, sleeping, and anticipating an "A" in the simulation all heightened anxiety among students. Students perceived the simulation as a performance test. Forty-one students (33%) reported that the simulation negatively impacted their learning and their ability to perform. Furthermore, the students reported that the simulation felt more like a test than a simulation with a learning component involved. Students also noted that their anxiety impacted their ability to think clearly and to make appropriate clinical decisions. Most importantly, the students reported that they were more focused on passing the simulation than taking care of the patient.

Nielsen and Harder (2013) conducted a meta-analysis and cited evidence that nursing students may be more anxious than other students of different majors and disciplines. In fact, according to Gordon and Buckley (2009), students stated that audio/video taping increased state anxiety. Furthermore, Ganley and Linnard-Palmer (2012) noted that faculty presence also increased state anxiety as it was perceived to be intimidating and unsupportive.In a field that calls for attention, focus, and effective and efficient task switching, it is not surprising that nursing students would be intimidated by and anxious about increasingly complicated experiential learning scenarios.

A pilot study, which was carried out by Carver and O'Malley (2015), explored muscle relaxation and its role in decreasing anxiety among nursing students. The researchers attempted to determine if there was a difference between levels of anxiety for students who participated in muscle relaxation and those who did not. A convenience sample was utilized and 15 senior nursing students who were in their final year of nursing education participated in this study. The State-Trait Anxiety Inventory was used to measure anxiety levels. The results of Carver and O'Malley's (2015) research indicated that relaxation techniques which were used prior to simulation decreased anxiety levels among students. It is important to note that this study included a small sample ($n = 15$), thus the findings may not be generalizable to the overall population. The researchers recommended that this study be carried out on a larger scale. It is noted that a measure of performance would be a good indicator to correlate with anxiety levels.

Gantt (2013) conducted a quasi-experimental study that examined how simulation-based preparation impacted anxiety and how anxiety impacted performance. A total of 39 students engaged in this study and were randomly assigned to either an experimental group or a control group. Prior to simulation, both groups received the State-Trait Anxiety Inventory. As previously noted, the State-Trait Anxiety Inventory tool is comprised of two self-reported scales to explore temporary state anxiety and long-term trait anxiety among adults. The reliability and validity of this tool is well established. The experimental group received extra simulation practice which was followed by a debriefing. The control group received the usual preparation, which was offered before the implementation of Gantt's (2013) study, prior the simulation exercise. Students were then scored on the Clark-Sweeney (2006) Clinical Simulation Evaluation Rubric (Gantt, 2013). This rubric is based on Benner's novice to expert theory of how nurse develop competence. Although the results of this study indicated that there was no significant difference between the two groups, it is important to note that there was a relationship between anxiety and simulation scores. Students who experienced higher levels of anxiety had lower simulation-based scores. The average state anxiety increased for ($M = 2.1$) The findings of Gantt's (2013) study suggest that high levels of anxiety are correlated with lower performance. It is important to note that a small convenience sample was used in this study. The sample size was limited, which resulted in a smaller sample for analysis.

Teixeira et al. (2014) conducted a randomized quantitative study to explore levels of anxiety and performance in a clinical simulation. Twenty students were randomly assigned to one of two groups. The groups were assessed using the traditional method that included the presence of an instructor or were assessed by film. Levels of anxiety was measured using the Zung's (1971) Self-Rating Anxiety Scale. In addition to Zung's (1971) scale, two other tools were used: (1) a second instrument that was developed to obtain information from students about their sex and age and (2) a third instrument that contained 37 questions about preparation and administration of medications. Performance was measured using the third instrument, which explored the number of correct answers related to medication administration. No significant difference was identified between the two groups before the simulation ($p = 0.272$) and after ($p= 0.765$). There were various limitations of Teixeira et al.'s (2014) study, which included (1) the sample size was limited to 20 students (thereby impacting the potential generalizability of the results) and (2) the sample was not adequately powered. Furthermore, it is important to note that 70 students were invited to participate in the study; however, decided not to participate due to undiscussed reasons.

Melincavage (2011) conducted a

qualitative phenomenological study that explored student anxiety in the clinical setting and how student anxiety impacted performance. A purposive sample was obtained from two undergraduate nursing schools and included seven students. A face-to-face unstructured interview was used to collect data. Common themes that emerged about student anxiety included feelings of being demeaned, competition among peers, uncertainty of ability, quality of relationship with faculty and peers, abandonment, being exposed as a failure by faculty. One student reported that she considered leaving the program because she was demeaned concerning her ability to perform correctly.

Suliman and Halabi (2007) conducted a quantitative study to explore the relationship between self-esteem, state anxiety, and critical thinking. A convenience sample including first year students (n = 105) and fourth year students (n= 60) was used for this study. The State-Trait Anxiety Tool, Rosenberg Self Esteem Scale, and the California Critical Thinking Disposition Inventory were used for data collection purposes. The researchers identified a positive correlation between critical thinking ability and self-esteem and noted a negative correlation between critical thinking and state anxiety. The results of this study indicated that both groups had satisfactory levels of critical thinking and self-esteem but also experienced high levels of state anxiety. Students who were in their first year of nursing school had higher levels of state anxiety ($p = 0.042$) than students in their fourth year of nursing school ($p = 0.000$). It is important to note that graduating students had higher self-esteem levels (SE levels; $m = 39.10$; $SD = 5.57$) and lower state anxiety (SA levels; $m = 45.68$, $SD = 7.95$) than first year students(SE: $m = 37.35$; $SD = 5.77$;SA: $m = 47.00$,$SD = 9.00$).

The use of virtual simulation has become increasingly popular in nursing education, but little is known about the effectiveness of virtual simulation (vSim) as a preparation method used to decrease anxiety in clinical simulation experiences. Foronda et al. (2016) noted vSim is a web-based platform in which students can interact with patients and receive feedback about their performance. Foronda et al. (2016) conducted a quantitative study about virtual simulation to explore the effectiveness of using this method for mastering clinical skills. A sample of 120 students participated in a virtual simulation. Of the 120 students who participated in the virtual simulation, 54 students completed the post-simulation evaluation. Students who performed the virtual simulation were not graded on their performance. After the simulation, students participated in an instructor-led debriefing and evaluated their virtual simulation experience using an electronic survey. The results of this study indicated that virtual simulation was directly related to the role of the nurse and reinforced knowledge. Although the results of this study were significant, further research should be conducted to determine if virtual simulation can enhance learning and decrease anxiety in real life situations (Foronda et al., 2016).

Gu, Zou, and Chen (2017) conducted a randomized control about virtual simulation and its ability to enhance clinical performance. Twenty-eight sophomore nursing students participated in this study. Students were randomly assigned to either a control group or experimental group. The experimental group received ten virtual simulations. At the end of the semester, a 100-point test was administered to students to determine clinical skill performance. The results of the 100-point test indicated that the scores in the experimental group ($M = 73.31$) were greater than the scores of the control group ($M = 65.36$; $p = 0.032$). It is important to note that this study's sample size was small, thereby limiting the generalizability of the results.

Cobbett and Snelgrove-Clarke (2016) conducted a study, which employed a randomized pre-test/post-test design, that included 56 third year BSN students. The purpose of this study was to investigate if virtual simulations increased knowledge and self-confidence among study participants and decreased anxiety levels prior to the clinical experience. Study participants were randomized into two groups and participated in either a face-to-face simulation or a virtual simulation. The Nursing Anxiety and Self Confidence with Clinical Decision-Making Scale and the Simulation Completion Questionnaire were used during this study. The results of this study indicated that there was no statistical significance between knowledge and self-confidence. Furthermore, students did not report a decrease in anxiety when virtual simulations were utilized. It is important to note, however, that the sample size in this study was small ($n = 56$).Furthermore, students were not oriented to the learning platform before the virtual simulation experience, which may have impacted anxiety levels.

Methodology and Implementation:

A pre-test/post-test design was conducted to explore the impact of pre-simulation preparation on student state anxiety during a simulation-based activity.
This study was conducted at a private university located in northern New Jersey, that offers accredited baccalaureate, masters, and doctoral programs in nursing. Within the past decade, the undergraduate nursing program introduced simulation into the curriculum the purpose of enhancing classroom and clinical instruction.

Before the study was conducted, a power analysis was run and the results indicated that a total of 59 students would be an appropriate sample size for this study. Due to the COVID-19 pandemic, which resulted in strict requirements being imposed on the number of students in clinical groups, a smaller group was recruited. A non-randomized convenience sample of traditional senior-level BSN nursing students ($n = 12$), who were enrolled in either of the two sections of a Clinical Pediatrics Nursing course, engaged in this study during the fall of 2020 semester. Of the two class sections, one class served as the intervention (treatment)group and the other class section served as the comparison group. An information sheet, which detailed the specifics of the study, was presentedto all student volunteers. Students who volunteered to participate in this study had their responses recorded via paper and pencil. Demographic data including the participant's gender, age, and race were collected from participants in both groups/course sections. All students who were enrolled in the two sections of a Pediatrics course received an in-class clinical simulation.

The study was approved by the institutional review board of the 2 universities where the study was conducted and where the doctoral program is located.

Instrument

The State-Trait Anxiety Inventory (STAI) was utilized during this study to

measure self-reported state anxiety levels among participants (Spielberger et al., 1983). Although students completed the entire 40 item test, only the first 20 questions were analyzed because the focus of this study is state anxiety. The STAI incorporates a 4-point Likert scale in which scores can range from one ("not at all") to four ("very much so"). The STAI incorporates a S-Anxiety scale (Form Y) and a T-Anxiety scale. The S-Anxiety scale consists of 20 statements that measure how an individual is feeling "right now" or at that specific moment. The T-Anxiety scale consists of 20 statements that measures how respondents generally feel (e.g., "I feel calm," "I feel secure," "I am tense," "I feel strained").

The S-Anxiety scale has consistently been used to measure anxiety in stressful situations (e.g., unpleasant events [schoolwork, examinations, etc.]). The T-Anxiety scale has been used to measure clinical or general anxiety problems among individuals. Each test uses a 4-point Likert scale for each statement. The first 20 questions are related to state anxiety and the remainder are related to trait anxiety. A score of 1 indicates a minimal experience of anxiety and a score of 4 indicates an intense or maximum experience of anxiety. The test focuses on specific areas that include worry, apprehension, nervousness, and tension. Upon the completion of the test, scores are totaled. Scores can range from 20 points to 80 points. A score of 36 and 38 have been documented as normal levels of anxiety and a score of 80 or above is indicative of more intense levels of anxiety.

The STAI has high reliability and validity scores. According to Speilberger (1983), the Cronbach's alpha coefficient for state anxiety is 0.93 and the Cronbach's alpha coefficient for trait anxiety is 0.90. Furthermore, the median reliability for state anxiety is between 0.16 and 0.62. Spielberger et al. (1983) noted that internal consistency was satisfactory in all studies, which denotes validity and reliability. The PI was granted permission to use the STAI by Mind Garden, Inc.

Implementation

Both the intervention and the comparison group received the same in-class clinical simulation. During September of 2020, the in-class clinical simulation occurred during normal class time. Prior to the simulation, all enrolled students of both groups/course sections completed a demographic questionnaire and the 40-item State-Trait Anxiety Inventory pre-test. Students who were enrolled in the intervention group completed a virtual simulation. The virtual simulation was assigned to students, via email, one week prior to the in-class clinical simulation experience. The comparison group did not receive the virtual simulation. Both groups completed a pre-test; an in-class simulation and a post test. Additionally, all students completed a Survey Monkey anecdotal survey.

Before the simulation experience, the intervention group received the virtual simulation preparation whereas the comparison group did not. The vSim that was selected for this study detailed a case of a five-year-old female who had mild intermittent asthma symptoms and was sent to the emergency room for further evaluation. Based upon the case information provided, students were expected to perform a general assessment, to recognize mild to moderate respiratory distress symptoms, and to administer necessary medication(s). Additionally, students were asked to identify asthma triggers and interventions. Students were required to complete the pre-test, the vSim, and a post-test. Students were instructed to repeat the vSim until they received a benchmark grade of an 80% on the post-test.

On the day of the scheduled simulation, students in the intervention group were greeted by the director of the simulation when they arrived at the Nursing Resource Center and Simulation Lab. Then, the temperatures of students were screened (as per the University's COVID-19 protocol). Once temperatures were deemed as acceptable, students were directed to the debriefing classroom to join their faculty and clinical classmates. At this time, the STAI pre-test was given to students. Participants responded to all questions on the STAI. Following the pre-test, students were pre-briefed on the learning objectives for the day's scenario. Specific details were given to students about the patient's SBAR report, asthma signs and symptoms, and medications. Students also had the opportunity to ask questions about and discuss the patient's diagnosis and history.

Students were escorted to the simulated patient's room for a hands-on orientation to the space, the equipment, the manikin, and the chart (EHR Tutor). While staff members explained the manikin's functions, students had an opportunity to palpate and auscultate the manikin. Additionally, students were shown how to operate, and provided with an opportunity to practice the patient monitor functions. Furthermore, students learned how to call for help (as needed), using the intercom in the simulation room. Students also were provided with the opportunity to examine the patient's electronic health record (EHR) and medication drawers.

Due to social distancing restrictions, three students actively participated in the simulation at one time. One student served as the patient's family member and the other two students served as nurses. Students who were not participating in the simulation had the opportunity to view a live audio-video feed of the simulation, which was presented using the Laerdal's SimView server software. After the simulation scenario was completed, students returned to the debriefing room to join their colleagues. Students completed the STAI post-test prior to debriefing. Participants responded to all questions on the STAI.

The Promoting Excellence and Reflective Learning in Simulation (PEARLS) model was used for debriefing. During the analysis phase, the facilitators used the PEARLS method and scripting tools to facilitate student-driven multivocal dialoguing and reflection. During the summary phase, students discussed takeaway points. Upon the conclusion of the simulation experience, students completed an anonymous Survey Monkey web-based evaluation to assess their simulation experience.

Surveys were scored using the instrument's results, which utilized a 4-point Likert scale. Each survey item was given a weighted score of one to four. On the instrument, scores can range from a minimum of 20 points to a maximum of 80 points. Although the results of the survey generate both (S) state and trait anxiety scores, using a Likert-scale, only S-scale scores were evaluated in this study.

On ten of the 20 S-scale items, a rating of four indicated a high level of anxiety. On the remaining ten questions, a rating of four indicated the absence of anxiety. A total weighted score for the items that comprised the S-scale was the data of interest explored during this study. Data was analyzed to determine measures of

central tendency and variation.

Demographic data (e.g., gender, age, and race) was collected. The State-Trait Anxiety Inventory survey data was analyzed utilizing the statistics software package SPSS-11.0 for Windows. The data set was examined for missing data. Descriptive measures of central tendency and variance including the mean, median, and range and standard deviation were used to analyze the results. Post-test anxiety scores, which measure state anxiety, were compared to pre-test scores to determine if a change in anxiety occurred among participants of the experimental group who completed the virtual simulation. Aggregated scores for the state anxiety (S-Anxiety) scale (i.e., questions 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20) were reversed coded. The purpose of reverse coding these questions was to ensure that respondents were giving consistent answers, thereby allowing for control of bias.

Results

Demographics

Twelve participants engaged in this study. The youngest participant was 21 years of age and the oldest participant was 34 years of age. On average, participants were 26.5 years of age. Nine of the participants identified as female (75%) and three of the participants identified as male (25%). There were an equal number of participants in each group although gender differences existed. Six of the participants (50%) identified as Caucasian, four of the participants (33.3%) identified as Hispanic, and two of the participants (16.6%) identified as African American. Participants also provided detailed information about their medical experience. Six of the participants (50%) noted that they had no medical experience. One of the participants (8.3%) noted that he/she had two years of experience. Five of the participants (41.6%) noted that they had more than two years of experience. Of the participants who had experience in the medical field, two of the participants (16.6%) reported they were Certified Nursing Assistants (CNAs) and five of the participants (41.6%) reported they had other healthcare experiences but were not CNAs.

Findings

Table 1 presents descriptive statistics regarding pre-test state anxiety scale scores for both the intervention group and the comparison group. Table 2 pres-

Table 1

Pre-test Results for State Anxiety Scores

	Comparison Group	Intervention Group
Mean	39.16	42.33
Median	42	42.5
Mode	42	49
Range	30-44	34-49
Standard Deviation	5.7416	6.12

Table 2

Post-test Results for State Anxiety Scores

	Comparison Group Post-Test	Intervention Group Post-Test
Mean	41.5	42.16
Median	43	40.5
Mode	N/A	36
Range	32-49	36-57
Standard Deviation	7.092	7.83

ents descriptive statistics regarding post-test state anxiety scale scores for both the intervention and the comparison groups. Additional statistical testing was not conducted due to the small sample size.

In the intervention group, state anxiety means scores, showed a decrease of 0.17 mean difference from the pre-test to the post-test period. While in the comparison group, state anxiety means scores showed an increase of 2.34 from the pre-test to the post-test period. The negligible mean decrease in state anxiety levels in the intervention group does not support the research question under study that students who are engaged in pre-simulation preparation report decreased levels of anxiety as compared to students who do not engage in pre-simulation preparation.

Participants completed the Survey Monkey Simulation Evaluation, routinely used by the simulation center following debriefing. This survey evaluation provided facilitators with information about how participants felt about the simulation experience. Although the survey was anecdotal in nature, it is important to mention some similarities identified by the intervention group and the comparison group. Both the comparison and the intervention groups had similar scores, noting a 83.33% consistency, in terms of the following: (1) the simulation experience clarified priority actions that needed to be addressed by participants if they encountered a similar situation, (2) participants felt comfortable making mistakes during the simulation experience, (3) participants felt more confident in their ability to recognize changes in a patient's condition, (4) participants felt prepared to work as a team, and (5) participants were challenged in their thinking and decision-making abilities. Additionally, 66% of participants (n = 8), in both groups, expressed their interest in engaging in additional simulation scenarios. Although this information does not indicate how the vSim experience impacted anxiety among participants, it is important to note that these simulations allowed participants to gain relevant subject-related knowledge.

Discussion

The findings indicate nearly equal levels of state anxiety from the pre-test period to the post-test period among participants in the intervention group. Even though the intervention group reported a slight decrease in state anxiety, while the comparison group reported an increase in state anxiety after a simulation exercise, statistical conclusions cannot be drawn due the study limitations of small sample size and lack of randomization.

Limitations

The major limitation of this study was the sample size. The initial sample size, for this research study was 20 participants but unfortunately, due to COVID-19 restrictions, only six students could participate in each clinical group. The group sizes were determined by guidelines set forth by the study site. Another limitation was the lack of random assignment. The small sample size and lack of randomization limited the generalizability of the findings.

Additionally, the COVID-19 pandemic may have impacted student anxiety. As a result of the pivot to remote learning, which started in the Spring of 2020, face-to-face clinical instruction was halted. Therefore, due to this halt, students were required to begin learning in a virtual clinical setting. Virtual settings provide students with minimal hands-on patient-related training opportunities, which may have resulted in increased anxiety levels among participants. In fact, participants were away from the study site learning environment for some time (i.e., from mid-March of 2020 to the September of 2020), which could have heightened participant anxiety levels.

In addition to being away from the study site, upon their return, students likely experienced additional pressures. Upon entering the simulation lab, the student temperatures were attained. Furthermore, participants were also assessed using "Campus Clear," which is an online app that assesses individuals for subjective COVID-19 symptoms. Finally, students were required to wear personal protective equipment (PPE) and remain socially distant (i.e., six feet apart). All of the aforementioned COVID-19 related practices may have caused stress, prohibited collaboration and team talk, and more, thereby impacting anxiety levels.

Recommendations and Implications for Nursing

It is critical that instructors are aware of the impact of anxiety during simulation scenarios. To enhance the student learning experience and to provide a supportive learning environment, unnecessary anxiety-related factors should be avoided (if possible).As noted by Gantt (2013),Neilson and Harder (2013), and Shearer (2016), when students experience anxiety, knowledge retention decreases, which can result in significant issues, specifically in the field of nursing.

More research is needed to explore if simulations can be further strengthened by utilizing pre-simulation-based activities. Sinclair and Ferguson (2009) noted that self-confidence levels among students often increased after simulations. Furthermore, McCaughey and Traynor (2010) noted that simulations can positively influence clinical experiences. The aforementioned findings contradict the findings noted by Beischel(2013). Specifically, Beischel(2013) noted that anxiety during simulations can hinder student performance, thereby making students increasingly focused on passing the simulation as opposed to focusing on patient care. By integrating pre-test components to help reduce anxiety levels and changing the structure of simulations, instructors can change the focus of the simulation. Pre-simulation experiences allow students to complete the entire simulation prior to performing the simulation in person. By offering pre-simulation experiences, students may have unlimited opportunities to make corrections and learn from their mistakes. Additionally, due to pre-simulation experiences, students have the time to critically think and explore facets/factors that might occur beyond the scope of the scenario. For example, instead of focusing on one's grade, students can focus more so on patient care outcomes.

In conclusion, a limited number of studies have explored the use of virtual simulation as a preparation strategy to reduce student anxiety during nursing simulations. Further research is required to examine the complex relationship between preparation, the experience of anxiety, and student performance in simulation scenarios.

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Growing Old Gracefully: Live it!

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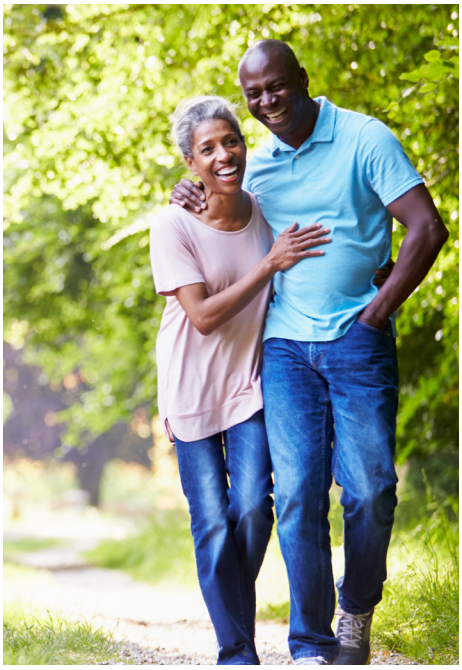
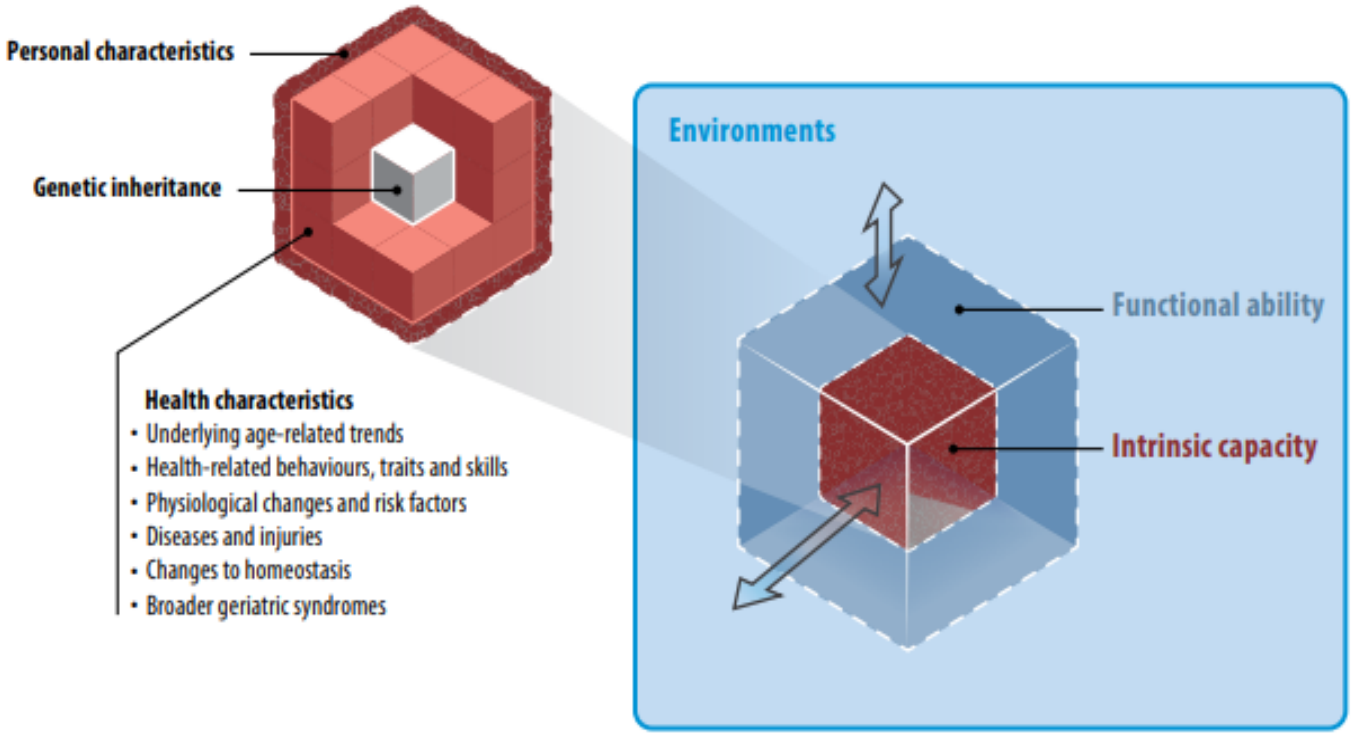
Responding to WHO's call for Healthy Aging urges all of us to KNOW IT, DISSEMINATE OR PROPAGATE IT and LIVE IT (in Pilipino, *Alamin, Ipalaganap at Isabuhay ang mga alituntunin upang malusog na tumanda*). You might hesitate abiding with the Call for Action because it might not be your priority or because it might be beyond your plan in life. But Haggai's law says, "**Attempt something so great for God**". So here we are, attempting to spread the call for healthy aging with the hope that this article will be pleasing to Him. We wish every one of us will age healthily. Let us share among each other our knowledge and experiences on healthy aging. For some, what we will share might already be known TO YOU and probably much more, thus this will merely serve as a reminder or enhancer.

Is healthy aging within your hands? It is both a YES and a NO. It is a Yes, because if you will it, you can achieve it, probably partially. It is a No, because if you will not cooperate with people around you, nor they cooperate with you, it will not be achievable. Our answer is based on the healthy aging concept. See Figure below, (WORLD REPORT ON AGING AND HEALTH, 2015).

The concept of healthy aging considers 3 major factors, which are intrinsic, environment, and functional ability. The older person's health (expressed as functional ability) is determined by the intrinsic factor and the environment.

Intrinsic factors include three aspects, the personal characteristics, genetic inheritance, and health characteristics. Personal characteristics are the attitude and personality of the older persons. Ge-





netic inheritance cannot be ignored as genes predisposed older persons to illness. Health characteristics on the other hand is what aging and illness do to the older persons and these include the following: age related changes, health-related behaviors, traits and skills, physiological changes and risk factors, diseases and injuries, changes in homeostasis and broader geriatric syndromes.

Environment are all the factors in the extrinsic world that form the context of a person's life and it includes the social environment (the people surrounding the older person), physical environment (home and community) and we would like to add, the resources like financial and medical health services. We encourage everyone when thinking of environment, the social determinants of health should be considered.

Functional abilities is the resulting health status which results from the interaction of intrinsic factor and the environment. **In our Filipino words,** *"kakayanan ng matandang mag-isip at kumilos nang malaya at nag-iisa"* (ability of the older adult to think and move independently and alone). According to Rudnicka, Napierała, Podfigurna, Męczekalski, Smolarczyk, & Grymowicz, (2020) functional ability is referred to as the ability *"to meet their basic needs, to learn, grow and make decisions, to be mobile, to build and maintain relationships, and to contribute to society."* These are all the abilities every one of us want to maintain as we age.

However these abilities might not be possible for all of us if we do not take care of ourselves. In the absence of the above characteristics, an older person is considered functionally disabled and dependent due to presence of chronic illness. Determinants of disability and dependency are called risk factors. Efforts by persons, health providers from professionals, paraprofessionals, as well as paid and unpaid caregivers should engage in positive actions to modify if not eliminate the modifiable risk factors to prevent disability and dependency, thus foster healthy aging. Lancet 2020 listed twelve (12) risk factors that are contributory to the development of dementia and we find them almost similar to the risk factors of healthy aging listed by WHO 2015 . Risk factors have several categories, according to Michel (2016) and these are non-controllable risk factors, distal risk factors, and modifiable risk factors. Non-controllable risk factors are those that cannot be controlled by the person and these include genetics, gender, ethnicity, intellectual quotient or family background. Distal risk factors are those factors by which the person has difficulty in controlling and this include economic background, socio-cultural determinants, education, air pollution, or exposure to noise or the sun.

The twelve risk factors listed by Lancet 2020 are education, hypertension, hearing impairment, smoking, obesity, depression, physical inactivity, diabetes, low social contact, excessive alcohol consumption, traumatic brain injury, and air pollution. Out of the twelve risk factors only eleven (11) are modifiable risk factors (factors that a person can control), excluding education as it is difficult to control when we are already aged.

The intention of this paper is to celebrate with you in the UPINHF, the decade of Healthy Aging which started in 2020 and will end in 2030. The launch (virtual) was done in October 2020 which I think was overshadowed by the coming of the pandemic.

Members of UPINHF are comprised of young and old. We are sure; it will be fun and healthy to be sharing among us our best practices to control the risk factors. In this article we start with physical inactivity, which is very possible now with pandemic. Majority of articles we read actually placed physical inactivity and malnutrition as the topmost risk factors of healthy aging. We are happy to share with you the experiences of Dr. Manahan during her faculty days at UPCN:

"I did suffer from effects of physical inactivity during this pandemic. While I was still teaching, I used to have a lot of exercise every time I planned to go home after a day's activity. This was my usual routine: from the second floor where I had class I would go to the third floor and get my things and go down from third floor to the ground floor. For those who know the Pedro Gil (formerly Herran St.) environment, I would struggle in crossing the Taft Avenue to go up the 3rd floor of LRT, my best transportation choice if I wanted to go home within 2-3 hours. At the LRT which was jam-packed with people, I would usually keep standing as there were no more seats available. Upon reaching Munoz, I would go down three floors using stairs as the elevators were small and I doubted the cleanliness of the elevators. I would ride a jeepney going to SM North and cross using the foot bridge and walked from Annex to the Block. If I were lucky I would be able to sit right away inside the van which will bring me to our subdivision. In my unlucky times, I have to be standing 20 minutes to one hour waiting for the van. I am sure those who are familiar with the place and situation are already sweating and panting now feeling with me as I traverse from Pedro Gil to SM North.

Now as I work from home, I feel trapped in our home due to my age and seeing the risk contacting COVID. Mind you, I suffered from aches and pains in my body and joints due to physical inactivity", ouch.

What are the effects of physical inactivity? Remember our lesson in Pathophysiology, if we do not move our body or if we are sedentary, circulation is impaired as our venopressors mechanisms are activated by the contraction of our muscles. Bone health is also affected as movement make more osteoblastic cells active (bone cells for building bones); with limited movements, the osteoclastic cells are activated leading to loss of bone density, making the bone structure soft and weak. It has been demonstrated in several studies that people who exercise regularly have greater bone density than those who are sedentary. And as they say, when you get old your transmission got rusty, so joint pains are likely experienced as well.

Sharing our EXPERIENCES IN DO's and DON'T's

DO's

- Do multicomponent (balance, endurance, strengthening and flexibility) exercises with a total of 150 minutes per week)
- Walking is an ideal endurance exercise; if you can tolerate the activity, you can gradually increase the amount of time you spend walking, aiming for at least 20–30 minutes a day.
- Always warm up before doing exercise and cool down afterwards to lower the risk of strains and sprains.

DON'T's

- Do not exercise with an empty stomach. Eat something light (such as toast with jam or skimmed milk) to give you some stamina.

• Do not exercise immediately after a full meal because this will affect digestion;

• Replenish extra fluids before, during and after physical activity, especially for prolonged exercise like biking

• Listen to your body. Do not exercise when unwell. If there is dizziness, shortness of breath, chest pain, nausea or vomiting, or muscle and joint pain during exercise, stop the activity and seek medical advice as soon as possible.

Based on our personal experiences and sharing from others, you may want to try this. Ideally if you will exercise daily, it will mean doing the exercise 30 minutes a day. If time will not allow it, you may divide it into 15 minutes twice a day, doing it like 15 minutes before lunch and 15 minutes at around 5 pm before snack. It is not also good to exercise like 3 hours before bedtime as it may affect your sleep.(National Institute on Aging) For those who love dancing, it is also a good form of exercise. I hope the dance steps are not the slow type of dancing.

If you can have an exercise buddy who shares same commitment it will help to continue with the exercise. We also encourage those who do not have a place to walk, the mall is a good place. But do not combine it with window shopping as exercise of your muscles and bones are not happening; only your eye muscles are exercised.

We purposely did not write all TIPS ON HEALTHY AGING because we encourage everyone to be contributors. May we respectfully suggest that we make this a Healthy Aging Corner? **What you can do is to:** write, specify your TIPS FOR HEALTHY AGING, from.... (your name), contact details. Before we know it, we can have a HEALTHY AGING module of UPINHF with all of us as authors. What do you think? In fact, this will be a start of a work in progress for all of us. We started, then hopefully you will follow. You can send the editors your tips. We appreciate very much your contribution to this endeavor of disseminating Actions Towards Healthy Aging .

What we shared in this issue was focused on the oldies. But we plan to continue writing on Healthy Aging from womb to old age--- across the lifespan. Excited? We are excited and we hope you share the same excitement. In following the healthy aging principles we can influence our grandchildren, relatives, and

friends to have healthy aging and ensure a healthy future generation, contributing to a healthy and a happy society. (Translating it to Filipino terms, *Excited kami, sana kayo rin para sa pamamagitan ng salin- lahi, sabay-sabay ang mga apo, kamag-anak at kaibigan natin para maging malusog ang pagtanda ng mga susunod na henerasyon tungo sa isang malusog at masayang pamayanan)*

LET US JOIN HANDS TOWARDS HEALTHY AND HAPPY AGAIN! (MAGKAISA TAYO TUNGOSA MALUSOG AT MASAYANG PAGTANDA)

GOD BLESS US ALL WITH GRACEFUL AGING!

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5. Good Night Sleep

https://www.nia.nih.gov/health/good-nights-sleep

The Role of School Nurses' Involvement in Changing Public Policy

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Abstract

The purpose of this descriptive cross-sectional survey was to describe the New Jersey school nurses' involvement in influencing and changing public policy. One hundred sixty-two New Jersey state school nurses completed the Public Policy Involvement by School Nurses survey. The sample comprised of (N=162) New Jersey State School Nurses who completed the Public Policy Involvement by School Nurses survey. The results showed that about 10% of school nurses reported high involvement in influencing policy while 42.4% reported no involvement in changing public policy. Voting, contacting officials and providing policy information to consumers and other health care professionals were identified by school nurses as their top policy practices.

Introduction

Practices in the health professions, including nursing, are legislated at the federal, state and local levels (Munsey, 2011). Nurses practice in various clinical settings and specialties that are additionally governed by specialized regulatory agencies. For example, school nursing is regulated by the education code of each state and policies and procedures of each school district (Chewey & Jannone, n.d.; Munsey, 2011). As healthcare providers practicing in the education environment, school nurses are in the best position to advance health policies and programs in the school system that focus on school-aged children (Chewey & Jannone, n.d.; Munsey, 2011). Nevertheless, school nurses are not widely viewed as policy or program experts even though the National Association of School Nurses (NASN) identifies school nurses as having a leadership role in health policy development. As the sole health care professional in the school, nurses have the expertise to develop school health policies, health programs and the provision of health services (NASN, 2016a). However, to date little is known about the public policy involvement of school nurses.

Background of the Problem

Involvement in policy development is a new concept in nursing (Arabi et al., 2014). Policy involvement is also notably low in developed and developing countries (Kunaviktikul, 2014). For example, a study in Thailand found nurses had no to low involvement in health policy development (Kunaviktikul et al., 2010). Similarly, in East Africa, Sharif and Potgieter (2012) found nurse leaders' involvement in policy development was limited and inconsistent. Differences in public policy involvement may occur by practice setting or specialty. In the US, Oden, Price, Alteneder, Boardley, and Ubokudom (2000) documented 59% of nurse practitioners were involved in policy through political activities, even though involvement was not successful in influencing policy makers to eliminate restrictions of their practice.

Other healthcare professionals recently explored their involvement in public policy. Kerr etal. (2017) studied Master Health Education Specialists involvement in public policy. The results revealed 94% of Master Health Education Specialists voted, 56.5% contacted officials and 51.6% provided policy information. In addition, physician involvement in public policy is reported in the literature. Despite the American Medical Association (AMA) suggesting that the organization does not encourage its members to be politically active (Huddle, 2014), policy involvement is often displayed.

Literature identified the following reasons for nurses' lack of involvement in policy including: no time, too busy, lack of understanding, sees no benefit, averse to leadership, lack of a united-front, and involvement in politics is viewed negatively (Antrobus & Kitson, 1999; Kunaviktikulet al., 2010; Mason, et. al., 2012). These reasons have fostered nursing's political invisibility in shaping policy affecting their practice (Antrobus & Kitson, 1999). The New Jersey State School Nurses Association (NJSSNA) (NJSSNA, n.d.) identified that school nurses are not involved in policy because school nurses work in isolation and are not well versed in how to navigate the-policy process. Aversion to policymaking, lack of engagement skills, lack of knowledge on the policy process, and no confidence in the policy process keeps school nurses from navigating and involving themselves in policy (NJSSNA, n.d.). Although the professional organization, NASN, advances that developing health policy is an important school nurse role (NASN, 2017), their involvement in policy is not evident in the literature.

Conceptual Framework

The National Association of School Nurses framework for 21st-century school nursing practice provides structure and focus for evidence-based school nursing practice (Maughan et al., 2016). Advocacy and policy development are identified as competencies in the leadership principle. Through public policy

involvement, school nurses can influence public policy related to children's health issues using their skills and engaging with policy makers (Maughan et al., 2016). School nurses must focus on health policy through the following public policy involvement activities: analyzing policies, drafting policy, and working on a committee that leads to district and state level policies which positively affect their students (Maughan et al., 2016; Rasberry etal., 2017).

Purpose Statement

The purpose of this descriptive cross-sectional study was to describe the NJ school nurses' involvement in public policy and practices.

Research Questions

The following research questions were addressed:

1. How much involvement do school nurses have in influencing and changing policy?
2. What public policy activities do school nurses report?

Review of Literature

There is very limited research published on nurses' public policy involvement and even less so on school nurses' public policy involvement. In fact, the literature is sparse on public policy involvement of health professionals in general.

In the landmark study, Oden et al. (2000) conducted a quantitative descriptive survey study to determine the level and type of policy involvement of members from the American Academy of Nurse Practitioners (AANP). A purposive random sample of 440 nurse practitioners (NPs) responded to the survey (73% response rate). The Public Policy Involvement by Nurse Practitioners tool was used. Nurse Practitioners were asked to rate their level of involvement in public policy and to identify the activities they participated in over 4 years. The respondents indicated a mean score of 2.07 for level of involvement—the most common activities included voting (85%), giving money to a campaign (56%), contacting a public official (56%), and providing policy-related information to the public or other professionals (50%).

O'Rourke, Crawford, Morris, and Pulcini (2017) conducted a descriptive, cross-sectional, survey-designed study to evaluate the political efficacy and political participation of NPs across the United States and to better understand factors associated with their political interest, knowledge, and engagement. Using the Efficacy Index, the Trust in Government Index, and a researcher-developed demographic questionnaire, a purposive sample of 632 NPs participated. Almost all respondents voted in the last election (94%) and close to half contacted an official (48%). Eighty-four percent of the respondents in this study did not participate in political activities other than voting or contacting a legislator, which suggests the NP population is not engaging in political activities that can sway legislative initiatives (O'Rourke et al., 2017).

Jansson, et al. (2016) conducted a cross-sectional survey study that was designed to describe the factors that predict health professionals' engagement in policy advocacy. A sample of 97 nurses, 94 social workers, and 104 medical residents were randomly selected from eight hospitals in Los Angeles, CA. The Policy Advocacy Engagement Scale was used to measure the policy advocacy engagement of health professionals using seven factors, including patient advocacy engagement, skills, ethical commitment, eagerness, tangible support, organizational receptivity, and perceived effectiveness. The results of the study revealed that health professionals' policy advocacy engagement, including eagerness, skills, tangible job supports, and organizational climate were associated with high levels of policy advocacy when controlling for age, gender, race, profession, and hospital site (Jansson et al., 2016).

Recent research has focused on social workers, health educators, nursing faculty, and especially NPs. The literature review, evaluation, and syntheses conducted for this project suggest that NPs and other health professionals participated broadly in public policy such as voted in elections, supplied policy information to consumers and other professionals but there were few findings of direct influence of policy makers and legislation.

Methodology and Implementation

A descriptive cross-sectional survey design was used to describe the public policy involvement of school nurses.

Sample and Data Collection

School nurses who are among the 1200 members of the New Jersey State School Nurses Association (NJSSNA) and who have indicated they are willing to participate in studies on their membership and have submitted email addresses, were recruited to participate in the study. The inclusion criteria were nurses who speak and read English; who currently work in a NJ school with students from pre-kindergarten to twelfth grade; who are retired from a NJ school with students from pre-kindergarten to twelfth grade; or who are enrolled in a school nursing certification program. NJSSNA membership lists are available through the Research Committee, and potential respondents were contacted through e-mail. A single-stage sampling procedure using the NJSSNA Research Committee's release-of-membership list provided e-mail addresses for direct access to members. An initial e-mail was sent to those members who have opted to participate in the research. Two reminder e-mails were sent to members 2 and 3 weeks after the initial e-mail encouraging those who partially completed or did not complete the survey to do so .A nonprobability convenience sampling technique was used. Of the 204 participants that initially opted to participate, 162 completed the survey.

The setting involved school nurses who currently practice in NJ schools with students from pre-kindergarten to twelfth grade or are retired but did practice in NJ. Approval from the Fairleigh Dickinson University IRB was obtained. All participants were informed that participation in the study involved no more than minimal risk and that participation is voluntary.

Qualtrics, a Web-based survey tool was used to collect data because it provides a secure platform to build the survey, distribute the survey, and analyze the data. All eligible school nurses from the NJSSNA membership list received an e-mail from the researcher inviting them to participate in the research study, described participation requirements, and provided the link to the Web-based survey. School nurses were informed about the purpose of the study and that the anticipated time to complete the survey is about 10 minutes. The researcher's name and contact information was included, and participants were informed that they may change their mind about participating at any time. Completion of the survey questionnaire served as their informed

consent to participate. All participant responses were kept confidential through the Qualtrics advance security with the use of passwords, secure connections and firewalls. E-mail reminders to complete the survey were sent 2 and 3 weeks after the initial e-mail. Data collection occurred over a 6-week period. The number of usable data sets at the 6-week point as a proportion to the number of members initially contacted was calculated for the survey response rate.

Results

The public policy involvement survey by school nurses was scored according to instructions provided by the authors of the instrument (Oden, 1998). The demographic data was analyzed using standard descriptive statistics. Descriptive statistics was conducted to determine the frequencies and percentages for each of the survey items and demographic data items. To further characterize the results, chi-square tests of association were used to test if there was a relationship between policy involvement and age, school setting, education, and certification in school nursing. The level of significance was set at $\alpha = 0.05$.

Demographics

A convenience sample (N=162) of NJSSNA members participated in this study. The average age of the sample was 54.8 years (SD=8.5) with a range from 29 to 76 years old. The sample is characterized as predominantly female (99.4%) and Caucasian (88.2%). Most respondents reported they worked in an elementary school (51.6%) while 18.0 % and 19.9% respectively reported they worked in middle school and high school. One hundred fifty (93.2%) of the respondents indicated that they were certified school nurses. The sample was well educated with slightly over half (51.3%) reporting completion of graduate education and the other half completion of Bachelor of Science in Nursing (BSN) (48.8%) degree.

Outcomes

The mean score for self – reported involvement in influencing policy was 2.17 (SD=1.05), indicating low involvement. Close to two thirds (n = 104, 64.2%) indicated they had little to no involvement, one quarter (n = 42,25.9%) reported modest involvement, whereas 16 (9.9%) respondents indicated a high level of involvement in trying to influence public policy. The largest number of respondents, 78 (42.4%) reported no involvement in changing public policy while fifty -five respondents (29.9%) reported they were involved in changing policy in their work as a school nurse and 51 (27.7%) reported involvement in changing policy as a citizen, taxpayer or parent. An average of 14% of work time was reported spent on changing policy with a wide range of 1% to 100%.

Overall, 89.9% of school nurses reported participating in at least one policy activity. School nurses reported the highest involvement in voting (25.8%), contacting officials (20.5%), and providing policy information (12.7%). Conversely, school nurses reported the lowest involvement in testifying and drafting legislation (.2%) and testifying or research for a lawsuit (.4%). To further evaluate results, chi-square tests of association were used to test if there was a relationship between policy involvement and age, school setting, or education. There were no statistically significant associations found between demographic data and self-reported public policy involvement (age quartile and involvement, $X(12) = 15.64$, $p=.208$; school setting and involvement, $X(8) = 9.18$, $p=.327$; and education and involvement, $X(4) = 6.49$, $p=.165$).

Figure 1 illustrates the percentage of political activities divided into six categories as described by Oden (1998). These categories included: 1. Personal public policy action; 2. Influencing policy makers; 3. Providing policy – related information to the public and other health professionals; 4. Providing assistance (technical); 5. Organizing; and 6. Direct political action. The top three categories included Personal public policy actions (37%), Influencing policy – makers (31%), and Providing information (18%).

Discussion

The aim of this study was to describe NJ school nurses' involvement in influencing and changing policy. While study findings largely revealed modest to no involvement by NJ school nurses in influencing public policy, it is noted that approximately one-third of the sample identified involvement in changing policy in their work as a school nurse and as a citizen, taxpayer or parent. Chief public policy involvement categories included personal policy action, influencing policy makers, and providing policy information that consist of foundational level political involvement. Most respondents reported participation in at least one policy activity.

This is the first research investigating school nurses' public policy involvement and only a few studies have been published describing nurses' policy involvement in general. In comparison to prior studies, NJ school nurses' self – rated mean level of political involvement was similar to nurse practitioners' political involvement as documented by Oden et al. 1998. Furthermore, comparison of school nurses' public policy involvement categories and policy activities revealed comparable findings to the Oden et al. study. Personal policy action and influencing policy makers were the main categories of policy involvement in both school nurses and nurse practitioners who identified voting and contacting public officials as highly ranked policy activities (Oden et al., 1998; O'Rourke et al., 2017).

Limitations and Recommendations

While this study did provide information regarding NJ school nurses' involvement in influencing and changing policy, several limitations are acknowledged. This study was limited to a convenience non probability sample with a 14.6% response rate. Self -selection bias is a limitation because the respondents who chose to participate may not well represent all NJ school nurses. Since the sample was exclusive to NJ, study findings may not be generalizable to other states. Data collected were self - reported and therefore may or may not reflect respondents' true involvement in political activities.

Data suggest that school nurses are engaging in personal policy activities by voting and contacting an official but not activities that more directly influence policy. One respondent commented, "I do not know how to run for office" while another respondent commented, "I do not know my legislators." The findings and comments suggest that school nurses want tools and educational support to advance political competencies. The professional association, NJSSNA, should offer webinars or a series of educational modules to advance public policy involvement. The development of a coaching program following completion

of the educational program to increase the number of active and effective school nurse leaders may develop advocates for change in local and state policies and procedures that improve practice and health outcomes.

Conclusion

More research is needed to assess public policy involvement of nurses. A study conducted using qualitative methods to reveal the experience of school nurses that are influencing and changing policy may provide more insight and inspiration. Identifying factors that motivate school nurses to be active in policy endeavors may provide the foundation for a mentoring program.

School nurses' leadership in policy development and implementation is required to advance practice (NASN, 2016a; NASN 2016b). Providing professional development, online tools and coaching will support engagement in policy activities. As advocates for change, school nurses have the potential to develop and implement policies and thereby extend their influence to increase the health and well-being of the public.

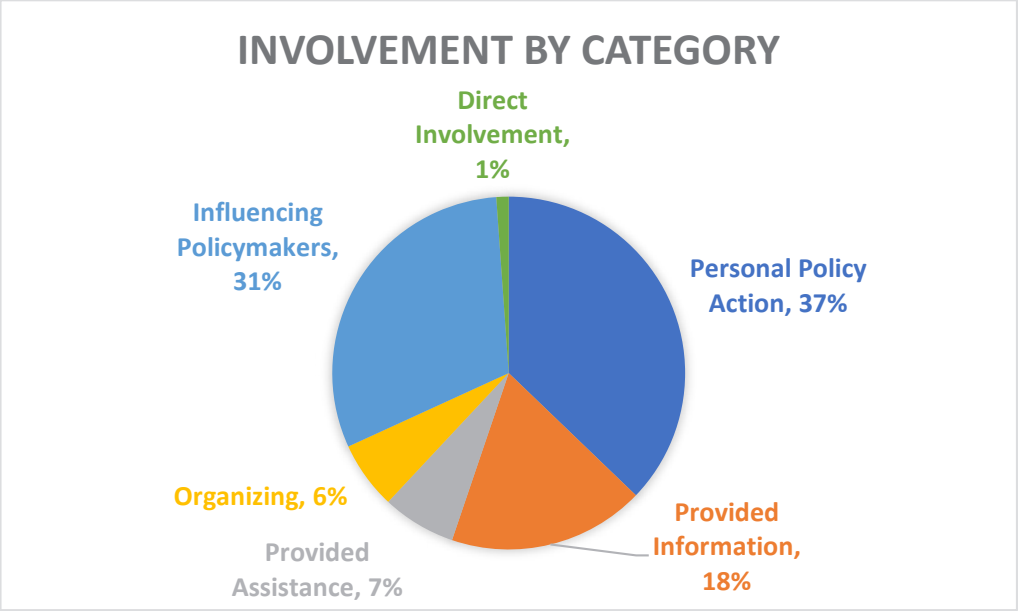
Table 1
School Nurse Public Policy Involvement by Activity

Policy Activity (n=503)	*f*(%)
Voted	130 (25.8%)
Contacted an Official	103 (20.5%)
Provided Policy Information	64 (12.7%)
Gave Money	42 (8.4%)
Used Mass Media	38 (7.6%)
Demonstrated	27 (5.4%)
Created/Worked on Committee/Coalition	22 (4.4%)
Worked on a Campaign	18 (3.6%)
Analyzed Policy	17 (3.4%)
Provided Assistance	16 (3.2%)
Lobbied	6 (1.2%)
Elected or Appointed Official	4 (.8%)
Testified at Legislative Hearing	4 (.8%)
Volunteered for Official	4 (.8%)
Testified or Research for Lawsuit	2 (.4%)
Drafted Legislation	1 (.2%)
Other	5 (1.0%)
Total	503 (100%)

Note. Multiple responses possible

Figure 1

School Nurse Public Policy Activity by Category



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Decreasing Patients Length of Stay in a Post-Anesthesia Care Unit

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ABSTRACT

Delays in discharge from the Post-Anesthesia Care Unit (PACU) may negatively impact the patient, operating room, PACU and the bottom line of the hospital. The purpose of this evidence-based project was to reduce the length of stay of PACU patients at a large academic health center in New York City by improving nursing documentation with the addition of an electronic audit tool (EAT) to the discharge scoring tool (DST) used currently.

Before the implementation of the EAT with DST documentation, a retrospective review of the nursing documentation in 764 patient records was done in December 2019. In addition to the patient length of stay, the four most common documentation deficiencies were analyzed: missing discharge assessments; assessment types modified; instances of multiple columns saved at once and incomplete discharge parameters. The EAT-DST nursing documentation was implemented from December 2, 2020 to February 2, 2021 on 2,191 PACU patients. The average length of stay in the pre-implantation phase was 434 minutes compared to the average length of stay in the post-implementation phase of 297 minutes. The average length of stay in the main PACU showed a thirty-two percent (32%) reduction after the addition of the electronic audit tool.

Introduction

Delays in discharge from the PACU may negatively impact the patient, operating room (OR), and PACU. When patients remain in the PACU, they cannot begin participation in Enhanced Recovery After Surgery (ERAS), which promotes early mobilization, feeding, and reaching postoperative milestones earlier. ERAS is associated with improved short and long-term postoperative outcomes (Fiore, 2012). The literature does not support a pre-specified, required length of stay for phase I (recovery from anesthesia) and phase II (return to near baseline of patient vital signs), so objective criteria are needed to indicate when a patient can advance towards discharge (Apfelbaum et al., 2013). Additionally, there is a significant financial impact when delaying discharge from PACU and transferring patients to the next level of care also affects operating room (OR) holds, delays for patients waiting for surgical procedures, and possible case cancellations.

Electronic health records (EHR) have been widely implemented over the past ten years in inpatient, outpatient, and perioperative settings. However, the introduction of EHR documentation has also presented new opportunities for errors and other unanticipated consequences that create patient safety challenges and is a global concern. EHR functionality and several variables such as staffing, level of training, and education can affect nursing documentation quality (Blake, Mowatt, Lindo & Bennet, 2013). Nursing documentation can be written or electronically generated, describing the care provided to a patient (Blair and Smith, 2012).However, nursing documentation, whether written or electronic has to be accurate and timely in order to be effective in shortening the patient's length of stay, ensuring continuity of care, clear communication between the healthcare team members, patient safety, and professional accountability.

Significance of the Problem

A systematic review conducted by Urquhart et al. (2010), has found that inadequate documentation remains a challenge for all care team members, including nursing both internationally and nationally. This study included nine trials across the world including but not limited to England, Sweden, Switzerland, and United States, evaluating nursing documentation to be an effective process to influence and improve nursing practice

and healthcare (Urquhart et al, 2018). The results of these studies focused on discrete and focused problems with nursing documentation with a few examples including transcription errors, documenting pain, incomplete documentation and the impact of nursing documentation and patient outcomes (Urquhart et al, 2018). Evidence from this review suggests that there are variations in the meaning of proper documentation due to inconsistencies with nursing practice within hospitals (Wang, Hailey & Yu, 2011). For example, research from perioperative nursing literature demonstrates little standardization in how nurses document the patient's postoperative status in the post-anesthesia care unit(Wang et al., 2011). Therefore, quality patient care is compromised, and difficulties arise in assessing the postoperative course of patient's recovery, resulting in a negative outcome such as increasing length of stay in the PACU. In a study conducted in Jamaica by Lindo et al., (2016) suggests that an effective method to appreciate issues with variations and ensure compliance involves quality audits of nursing documentation(Lindo et al., 2016). Optimization of nursing documentation is achieved with integration of best practices with use of standard processes, workflows, and tools (Lindo et al., 2016).

Some may argue that nursing documentation distracts from caring for the patient and becomes burdensome. However, accurate and timely nursing documentation is an integral component of all nursing care despite the patient care setting. It is a critical tool for nurses to provide reliable, structured, and effective communication to deliver patient-centered quality care (Wang, Hailey & Yu, 2011). The elements of the patient's documented record address assessments, care, interventions, and patient outcomes. This documentation provides a vehicle for monitoring the patient's progression and communication of relevant data related to the patient's care. If the documentation is inaccurate, has omissions or limited detail, it can place patients at risk for increased length of stay, adverse outcomes, and puts providers and healthcare organizations at increased risk for legal liability (Cromwell et al., 2018).If documentation fails to share essential patient information between nurses during handoff to other health team members, continuity of care can be disrupted, resulting in potential harm or unnecessary treatment delays such as delayed discharge from the PACU. Where real-time documentation of patient information drives clinical decision making and patient analytic systems, incomplete or inaccurate documentation may produce erroneous data upon which clinicians may rely (O'Brien et al., 2015 and Henderson et al., 2017).

The PACU is an area within the hospital where patients recover following invasive procedures with anesthesia. In most healthcare organizations, PACU is complicated and costly. It involves multiple departments and their respective staff to function correctly. Collaboration and coordination of patient care are vital for the PACU to run efficiently and safely. All staff who work in the PACU must perform their roles effectively to avoid system inefficiencies. If not, the entire system suffers, leading to prolonged PACU length of stay, the operating room holds, increased cost to the organization, and clinical implications for the patient. There are times when patients require a prolonged length of stay in the PACU due to their clinical condition; however, often, prolonged PACU length of stay results from avoidable reasons.

Structured nursing documentation produces data describing the nursing practice. Using other statistical information derived from nursing documentation also demonstrates nursing and patient outcomes. There is extensive evidence linking high-quality PACU nursing care, as evidenced by the corresponding nursing documentation,to reduced morbidity and mortality (Haret, Kneeland, Ho, Block, & Helfman, 2012). Thenurse's role in the PACU care setting is critical to provide surveillance and documentation of the patient's recovery progress to baseline post-anesthesia status.

Accurate documentation can prevent mistakes, decrease mortality, morbidity, and reduce liability for healthcare organizations. A recent study by the Agency for Healthcare Research and Quality (AHRQ) states most nurses have fewer problems prepping patients for discharge, fewer medication errors, and better quality of care when they have access to EHRs (Clinical Guidelines and Recommendations, 2020). Clinical Guidelines and Recommendations by AHRQ (2020) also found that nearly 15% of nurses surveyed stated the information was more probable to be shared and less likely to "slip between the cracks" when electronic systems are used when it comes to handoffs amongst departments (Clinical Guidelines and Recommendations, 2020).

A study performed in 2015 (McLaren, Reynolds, Cox, Lyall, McCarthy, McNoble, & Petersen, 2015)found that a short stay hospital admission was less expensive than a PACU stay longer than 2.5 to 3.5 hours. Additional consequences of prolonged PACU stays are increased OR holds, delays for patients awaiting surgical procedures, and possible case cancellations, all impacting the hospital financially(McLaren, Reynolds, Cox, Lyall, McCarthy, McNoble, & Petersen, 2015).

In addition to cost, quality of patient care, patient safety, and patient satisfaction can be negatively affected when discharge delays from the PACU occur. When patients remain in the PACU, they cannot begin participation in the early phases of their post-operative recovery. Timely discharge from the PACU promotes early mobilization (which can decrease the risk for clots and pneumonia), feed, and reach postoperative milestones earlier, reducing the chances of increased complications and morbidity and overall length of inpatient stay. Timely discharge from the PACU is associated with improved short and long-term postoperative outcomes (Fiore, 2012).

Clinical Problem

For patients at a large academic cancer center in New York City, does incorporating an electronic audit tool to the discharge scoring tool compared to using just the discharge scoring tool used currently decrease patients' length of stay by 10% over three months?

Review of Literature

As many hospital systems realized the implications of variability in the discharge process, many have implemented standardized documentation and tools to improve documentation and assessment criteria for timely discharge from the PACU. A systematic review by Philips et al. (2013) found many discharge scoring tools used widely with varying parameters, including the Modified Aldrete, White & Song, PARS, REACT, and MASS. This list is the most widely used, but not exhaustive. The systematic review showed that clinical reliability with the use of a discharge tool for as-

sessing discharge readiness is linked to cost-benefit analysis and contribution to improving nursing documentation and improving patient safety (Phillips et al., 2013). The review concluded that using a standardized tool assessing discharge readiness was shown to decrease delays in discharge where implemented (Phillips et al., 2013).

A retrospective cohort study by Eichenberger et al. (2011) in a Swiss University Hospital, found that a critical aspect of the PACU's effectiveness is the use of clinical pathways ensuring proper resource utilization in the PACU (Eichenberger et al., 2011). These critical pathways have been noted to reduce the length of stay and costs. However, there has not been any impact on postoperative mortality and morbidity (Eichenberger et al., 2011). After implementing the clinical pathway and discharge criteria for PACU patients, this Swiss hospital improved the flow. It reduced the median length of stay for all patients by 11.2% and the overall post-operative mortality rate by 36.6% (Eichenberger et al., 2011).

A qualitative research study by Mutshatshi, Mothiba, Mamogobo & Mbombi (2018) explored and described poor nursing documentation implications at public hospitals across South Africa and three themes emerged from this study. The nurse reported challenges with adequate time, the increased turnover of patients, and the proper electronic resources to complete their documentation. This study's results found that inaccurate nursing documentation is associated with increased LOS and mortality for patients(Mutshatshi et al., 2018). This study was limited as only selected hospitals in Limpopo participated in this study with limited nurses participating.

A systematic review by Urquhart, Currell, Grant & Hardiker (2018) looked at the impact of electronic medical record systems on nursing practice and patient outcomes. This systematic review examined nursing practice and patient outcomes using structured and unstructured systems. Manual and electronic medical record systems, nursing records, and charting by exception only documented abnormalities or deviations from the plan rather than regular intervals even when there are no changes (Urquhart et al., 2018).This systematic review of the literature by Urquhart et al. (2018) supports the link between accurate nursing documentation and the quality of care patients receive.

Nursing documentation stored in patient charts is a communication tool for sharing patient information amongst nurses and other members of the care delivery team(Urquhart et al., 2018). Electronic nursing documentation must be structured with the use of standardized language and incorporation of the nursing process. Evaluating the electronic nursing documentation's standardized content is crucial to reuse valid data to measure patient outcomes (Urquhart et al., 2018).

A qualitative study conducted in Melbourne, Australia by Braaf, Riley, and Manias (2015) found that there are many technical and practical challenges for perioperative nurses with documentation practices. Perioperative nurses' documentation is completed in parallel with hands-on care, presenting difficulties with timeliness (Braaf et al., 2015). Braaf et al.(2015) also found that documentation quality is extremely dependent on the tool and structure guiding nursing practice. Poor record-keeping not only undermines patient care but makes nurses more vulnerable to legal claims which arise from a breakdown in communication resulting from incomplete or inadequate records (Braaf et al., 2015). The findings of this study further identified that nurses did not consistently meet the receiving nurse's needs, causing communication failure specific to the handoff of critical clinical data compromising patient safety, quality, and flow in the perioperative pathway (Braaf et al., 2015).

In a meta-analysis study conducted by Jeffries, Johnson & Griffiths (2010), the authors identified seven common themes for quality nursing documentation. They are: document comprehensiveness; quality, patient-centered care; documentation of actual interventions completed along with patient outcomes; objective, logical,sequential;timely documentation that satisfies medical and legal requirements(Jefferies et al., 2010).

A mixed-method study by Sinni, Cross & Wallace (2011) in Melbourne, Australia, utilizes a documentation audit tool examining outcome data and patient outcomes deficiencies. The tool developed was comprehensive and focused on patient safety, improving patient outcomes (Sinni, Cross & Wallace 2011).

Björvell et al. (2000) conducted an audit study with the purpose of developing an audit tool that would audit specific criteria to evaluate nursing documentation. The audit tool was studied by three auditors independently. The tool's reliability was tested using the inter-rater reliability coefficient (Björvell et al., 2000). The final version of the instrument was completed and resulted in a new tool to audit nursing documentation. The Cat-ch-Ing instrument proved reliable and valid to audit nursing documentation (Björvell et al., 2000).

A systematic review by DeGroot, Triemstra, Paans & Francke (2018) studied eleven systematic reviews of the best existing evidence on quality criteria, tools, and nursing documentation requirements. The results of this study identified numerous quality criteria demonstrating the importance of following the nursing process, the use of standardized language, evidenced-based tools to assess the quality of nursing documentation and electronic health records (De Groot et al., 2018).

A descriptive cross-sectional study utilizing mixed-methods in Western Jamaica was conducted by Blake-Mowatt, Lindo & Bennett's (2013). This study's focus was to evaluate the quality of nursing documentation using an audit tool to determine the level of knowledge of documentation policies and the factors impacting documentation quality.

An audit tool developed by the Jamaican hospital incorporated quality criteria and was used to review nursing documentation, including structure and standardization (Blake-Mowatt et al., 2013). A focus group session was held with nurses in this Jamaican hospital to determine the knowledge of the documentation standards set forth by nursing policy (Blake-Mowatt et al., 2013). The results of the audit revealed that there was a high rate of accurate documentation and may be related to the experience level of the nurse (Blake-Mowatt et al., 2013). The charge nurse held the staff accountable, ensuring the nursing documentation policy was followed. This study was found to have high levels of accurate nursing documentation and adherence to policy guidelines. A limitation of this study was the quality of documentation was not assessed.

A meta- synthesis study by Jefferies et al. (2010) aimed to synthesize all pertinent information about nursing

documentation and present the critical components of quality nursing documentation. The study found seven common standards of nursing documentation across the literature. These standards include patient-centered documentation, interventions completed by the nurse including education and psychosocial support, objective clinical judgment, present findings systematically and succinctly, timeliness of documentation, gaps in care following regulatory and compliance guidelines (Jeffries et al., 2010). The literature review disclosed several tools, including the Phaneuf Nursing Audit, that was implemented dating back to 1976 (Jeffries et al., 2010).

The researchers have identified the critical problem of supporting nurses in appreciating the value of nursing documentation based on the literature and hospital policy. Through education, this hospital's policy incorporates the seven guidelines within a nurse's practice ensuring quality nursing documentation (Jeffries et al., 2010).

A study by Curtis. Et al, 2018 aimed at assessing current practice compared to retrospective outcomes to gauge trends in clinical nursing practice. This study conducted a prospective audit to assess the quality of perioperative nursing documentation over three time periods. This review evaluated perioperative nursing documentation's adequacy based on criteria established by the Royal College of Anesthetists and Australian and New Zealand College of Anesthetists (Curtis et al., 2018). Each period showed an increased improvement in accurate perioperative documentation with consecutive audits and these researchers proposed regular audits to assess accurate perioperative nursing documentation (Curtis et al., 2018).

A mixed-method systematic review by Wang, Hailey & Yu (2011), synthesized nursing documentation audit studies with an emphasis on exploring audit processes, identifying audit instruments, and describing the quality of nursing documentation and relevant data extracted. This study identified many issues with nursing documentation. One major issue revealed is the lack of documentation on a series of nursing topics, including assessment of preferences, need for knowledge and quality of life (Wang et al., 2011).

Wang, et al, (2011) also found the most common tools used, including Ehnfors and Smedby's comprehensive in-recording instrument, Cat-ch-Ing instrument and Q-Dio (Wang et al., 2011). These instruments collectively addressed various nursing documentation quality features, including structure, process, and content (Wang et al., 2011). According to this systematic review (Wang et al., 2011) it is not realistic for one tool to fit all and support all study settings because of internal circumstances based on different medical record systems and terminologies.

The researchers reviewed nursing documentation audits and reports of audit instrument development (Wang et al., 2011). Seventy-seven publications examining the audit approach focused on three aspects of nursing documentation. Several audit tools were utilized to investigate the quality of documentation. Nursing documentation is used for quality, legal planning, resource allocation, nursing development, and research (Wang et al., 2011).

Evidence from this literature review supports the use of an audit tool to evaluate nursing documentation accuracy for this evidence based project. In addition to different auditing methodologies, common nursing documentation accuracy measures were also prevalent in the literature,including auditing for the quality of nursing documentation structure, format, process, and content to ensure that comprehensiveness and appropriateness of care are captured.

Methodology and Implementation

In 2018, a discharge scoring tool (DST) was implemented to objectively measure patient discharge readiness from the post-anesthesia care unit (PACU) at a large academic oncology hospital in New York City. The discharge scoring tool (DST) was developed and integrated into the PACU nursing documentation flowsheet within the hospital's EHR. The DST utilizes nursing documentation of patients' physiologic parameters to and automated assessment of PACU discharge readiness. Before this time, discharge from the PACU was highly subjective, based on surgeon and anesthesiologist preference. This led to significant variation in practice, prolonged PACU length of stay, which was not clinically indicated, and operating room delays.

Several months post-implementation of the DST, most patients continued to have non-clinically indicated prolonged PACU lengths of stay. They were failing to meet PACU discharge readiness based upon nursing documentation within the PACU flowsheet in the EHR. Anecdotally, the staff associated this with the DST not functioning as intended. However, a brief retrospective chart review revealed nursing documentation was inconsistent, incomplete, and timeliness of documentation was variable. Also noted, nursing documentation workarounds were created, all of which impacted the DST's accurate functioning. Based on these factors, the nursing administration decided to add an audit tool to the DST to decrease the patient length of stay in the PACU.

Audit Tool Development and Inter-Rater Reliability

In collaboration with Nursing Informatics, an electronic audit tool was developed in August 2020 and was implemented in this evidenced based practice project after approval of the hospital and the university Institutional Review Board (IRB).

Reliability testing of Electronic Audit Tool

The Project Director and a doctorally prepared nurse at this hospital compared interrater reliability of the audit tool's performance on a sample of 49 cases (approximately 5% of the monthly caseload) from December 2019. This month was selected as data was already collected manually from the EHR on the four EAT-DST parameters (missing discharge assessment, modifying the type of assessment, saving multiple columns at once& missing DST score)during that month as part of the initial selection process for the audit tool criteria. The second nurse rater performed manual review in the same manner from the EHR for the same cases for each parameter. The Project Director, doctorally prepared nurse and informaticists reviewed the DST output during the initial pre-implementation period in December 2019 to identify the most common documentation deficiencies that prevented proper automated calculation of discharge readiness.

For the items "Missing Discharge Assessment" and "Missing DST Score" the presence or absence of this data is obvious in the patient record (supporting the

perfect agreement noted in Table 2, page 54). The item "Modified Type of Assessment" is similarly apparent to visual inspection of the record. However, when the two raters met to compare results, disagreement was noted for the item "Multiple Columns Back-entered." Upon discussion and joint review in the EHR, it was found that this documentation action on the part of the PACU overwrites the visible data in the patient record and it is very difficult to uncover this finding consistently during manual review. The two nurse raters performed a careful investigative review of the available data and reached consensus. However, when compared to the electronic audit tool result, which automatically detects this overwriting of clinical documentation as it occurs in the EHR while the PACU nurse documents, the kappa was found to be fair, k = .342 (95% CI, .180 - .503), p < .0005. Code review with the Nursing Informatics team who designed the electronic audit tool have confirmed that it is targeting the correct documentation behavior and that there is no other method that can make the backend calculation more apparent to a human reviewer. Analysis was performed using SPSS version 26.

Education Plan

An educational workshop was implemented to educate the PACU nurses and nursing leaders on how to interpret the report using the electronic audit tool-discharge scoring tool (EAT-DST)tool. Each PACU nurse was scheduled for a one-hour session to review the analyzed parameters and decipher the results. The training was presented in a PowerPoint format during several zoom sessions until all nurses in all shifts were trained.

Implementation

The EAT-DST tool was implemented for 3 months from December 2. 2020 to February 2, 2021 after obtaining approval by the IRBofthe hospital and the university. This electronic audit tool generates four daily reports by pulling data automatically from the DST to identify each instance of and calculate the number of EAT-DST metrics:

1. Missing discharge assessments
2. Assessments types modified (changing from routine vital signs to discharge assessment prevents calculation of discharge score)
3. Instances of multiple columns saved at once (incorrectly comparing data to the previously saved column)
4. Discharge parameters left incomplete (discharge score cannot be calculated).

These daily reports are sent to each unit nurse leader automatically by email. These daily reports are used by nursing leadership to provide real-time feedback to the registered nurses who are not documenting the DST appropriately. The goal of providing real-time feedback is to improve accurate documentation of the DST, which generates correct discharge readiness scores resulting in decreased length of stay in PACU.

Results

Demographics

The retroactive data review of nursing documentation of 764 patient records was done in December 2019 for comparison and the average length of stay in the PACU was 434 minutes.

After implementation of the EAT-DST tool, data was collected from the records of 2,191 adult patients with a cancer diagnosis that underwent a surgical procedure with anesthesia. The ages included in this study were between 18 - 74 years of age. This project has no exclusion for ethnicity and included both men and women. These adult patients underwent complex surgical procedures with anesthesia and post-surgical recovery in the main PACU between December 2, 2020 and February 2, 2021.

Individual patients and their length of stay were the focus of this project. The outcome data was derived from PACU case documentation in the EHR. The main PACU typically cares for adult patients with a variety of cancers undergoing complex surgeries including, hepato-

Table 1. Inter-Rater Reliability of Electronic Audit Tool

	Overall Agreement[a]				
			Asymptotic 95% Confidence Interval		
Items	**Kappa**	**Standard Error**	**Lower Bound**	**Upper Bound**	**Significance**
No Discharge Assessment	1.0	.082	.838	1.162	< .0005
Modified Type of Assessment	.962	.082	.801	1.124	< .0005
Multiple Columns Backentered	.342	.082	.180	.503	< .0005
Missing DST Score	1.0	.082	.838	1.162	< .0005

Note: [a] Sample data contains 49 effective subjects and 3 raters.Kappa was performed using SPSS version 26.

biliary, thoracic, gynecologic, head and neck, neurologic, urologic and breast cancer surgeries. Some complex cases include whipple, pelvic exenteration, neck dissection and extensive brain and orthopedic surgeries. General and regional anesthesia are the most common types of anesthesia used, requiring expert nursing care and careful observation to ensure the best possible recovery outcomes for each patient. Over the course of this project, length of stay and electronic audit tool results for a total of 2,191 patient cases were analyzed (see Table 2).

Quantitatively, this evidence-based project assessed deidentified secondary data, length of stay data filtered to evaluate length of stay while recovering in the main PACU. The output of the electronic audit tool was evaluated to review compliance with the specified parameters. The month of December 2019 data was chosen as the baseline comparator as this was the month when baseline data was initially gathered and evaluated by the expert panel which led to agreement on the four EAT-DST parameters that were selected for the audit tool.

During the collection and review period of December 2, 2020 through February 2, 2021, an overall total of 2,191 post-anesthesia care unit patients' data were recovered and their length of stay in the PACU was evaluated. Table 2 represents the number of patient cases, length of stay and the four parameters assessing compliance. The primary outcome of this project pertains to the reduction in average length of stay in the PACU. Length of stay analysis was performed comparing the number of minutes between the admission and discharge timestamps in the medical record with a target outcome of reduction of ten percent. Secondary outcomes for the purpose of this project is to reduce the number of documentation discrepancies with use of the electronic audit tool.

Patient Length of Stay

This project focus was to reduce the PACU length of stay by 10%. However, from the December 2019 baseline comparator average of 434 minutes pre-implementation phase compared with the post-implementation of 297 minutes the average length of stay showed a 32% reduction using the EAT-DST audit tool. During the pre-implementation phase a retrospective review of the documentation discrepancies were also analyzed. The data review of the four EAT-DST parameters pre-implementation revealed that 2.3% or 19 charts were missing a discharge assessment. There were also a significant number of modified type of assessments totaling 271 or 33% and multiple back-entered columns in 774 or 93% of charts that were found to be non-compliant. Lastly, the number of missing charts that had missing DST scores were 140 or 17%. These results were the driving force to improve practice and compliance with implementation of the audit tool leading to reduction in length of stay for patients in the main PACU.

Upon reviewing the documentation parameter results in Table 2, the post-implementation assessment period showed improvement with an average of thirteen (1.6 %) of charts missing discharge assessments compared to 2.3% at baseline. This is a 0.7% improvement from the pre-implementation period. The next parameter, missing discharge assessment also showed an improvement from 271 (33%) compared to post-implementation of an average of 150 or 19% of charts with modified assessments. Although there was a slight improvement in the next parameter, multiple columns back-entered with an average of 710 or 84% of columns compared to 93% at baseline, this parameter needs to be further evaluated to appreciate the challenges and barriers preventing documentation of each column individually. Lastly, the parameter measuring missing DST scores showed that pre-implementation, the number of missing scores was 140 or 17% compared to post-implementation of 104 or 12%.

Re-Education Session

Given the poor compliance with ongoing number of documentation discrepancies across the main PACU despite the identification of the four parameters disrupting the DST and implementation of the audit tool, further education was required. Based on the climate of the organization and other factors related to the pandemic, the leadership team felt that the staff were on education overload.

Upon collection of data, post-implementation, in collaboration with the perioperative leadership team, NPDS and

Table 2. Results by month

Month	*Patient cases*	LOS (minutes)		Missing Discharge Assessments		Modified Type of Assessment		Multiple Columns Back Entered		Missing DST Score	
	n	*M*	*(range)*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
December 2019	746	434	(37 – 2328)	19	2.3%	271	33%	774	93%	140	17%
December 2020	735	261	(48 – 1685)	6	0.6%	146	18.8%	675	70%	85	8.8%
January 2021	721	330	(42 – 2005)	11	1.2%	179	22.4%	732	83%	121	14%
February 2021	735	301	(48 – 2322)	22	3.0%	125	17%	723	98%	106	14.4%

Note: LOS = Length of stay

CNS, a decision was made to hold two one-hour video education sessions for the leadership to review the goals and ongoing issues with the leadership team again. During these sessions, monthly outcome data was reviewed to better illustrate the ongoing issues with documentation, interim analysis of progression.

Limitations

This project has several limitations. First, the timing of this project was impacted by the COVID-19 pandemic and the many competing priorities. Second, the frontline nurse leaders demonstrated conceptual knowledge in understanding the link between accurate documentation and length of stay, but they have mixed levels of commitment to improving the accuracy of nursing documentation leading to reductions in patients' length of stay in the PACU.

Recommendations and Implications

Creating sustained behavior change is a challenge in any organization. In order to ensure improvement in decreasing the length of stay in the PACU, the leadership needs to be engaged in improving practice and must consistently guide staff to best practices. The goal of this project was to evaluate the effectiveness of the electronic audit tool to influence compliance in nursing documentation, ultimately reducing length of stay in the PACU. Since nursing documentation remains non-compliant in the PACU, a recommendation is to develop a nursing policy for documenting in the discharge scoring tool. Within this formal policy, an accountability recommendation should be incorporated. This accountability guidance should be instituted similarly to the institution's controlled substance policy that allows for progressive disciplinary action when the documentation is not completed accurately and timely. This policy also has accountability implications for the nurse leader as well.

Due to the timing of the implementation of this project and the number of competing priorities, ongoing reeducation and data review over the next few months should be done as the institution return to normal operations from the pandemic. Nurse leaders and nursing staff should understand that these seemingly small actions (i.e. documentation deficiencies and workarounds) impact patient care and satisfaction and ultimately the hospital bottom line.

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Healthy Lifestyle for Healthy Ageing: Philippine Experience

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Everyone believes that Health is a fundamental right. The right to health was first proclaimed in 1948 in the preamble of the WHO Constitution and in WHO, 2017 (https://www.who.int/news-room/commentaries/detail/health-is-a-fundamental-human-right) "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition". With every right connotes responsibility. This right includes the responsibility of maintaining a healthy lifestyle. How can the nurse assist the older persons in promoting healthy ageing? Maintaining a healthy lifestyle is a personal, societal, as well as a spiritual responsibility. It is a personal responsibility to attain health of oneself, thus avoiding and /or decreasing the chance of being ill. Freedom from illness will allow the person to carry on the task as a member of the society and not become a burden to the family and to the society. It is a spiritual responsibility for according to the bible, 1 Corinthians 6:19-20 – "Do you not know that your bodies are temples of the Holy Spirit, who is in you, whom you have received from God? You are not your own; you were bought at a price. Therefore honor God with your bodies." Maintaining healthy lifestyle involves keeping our body healthy - a way of honouring God.

Health and wellness are commonly used interchangeably but according to literatures it has different meanings. According to WHO (https://www.who.int/workforcealliance/knowledge/resources/Health2020_long.pdf) health is referred to as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Attainability of the complete physical, mental and social well-being is however hard to attain. To attain good health is to look into its primary determinants which include the social, economic, and physical environments, and the person's individual characteristics and behaviors. Wellness, on the other hand according to Global Wellness Institute (https://globalwellnessinstitute.org/what-is-wellness), are consciously thought of and a self-directed practice to achieve one's full potential. It further stated that it is mul-

tidimensional and holistic, encompassing lifestyle, mental and spiritual well-being, and the environment. Thus the outcome of wellness practices is health.

Theory guides practice. The theory of prescriptive nursing of Ernestine Weidenbach was utilized to be able to come up with tailored fit care for clients. According to Weidenbach, the health care provider will have a goal and know the realities of the given situation in order to come up with tailored fit intervention.

To achieve the goal of promoting healthy and productive aging, it is vital that the nurse know what health is for an older person. The goal of healthy aging which is functional ability is the best definition of health for an older person. Functional ability according to Healthy Aging (WHO, 2015) is allowing them to live in the setting of their choice and to receive services that promote independence, meet their preferences and facilitate social connection. Healthy aging is not only for disease -free older persons; it is also for those who have diseases whose presentations and burden can be modified with health provider's timely, promotive, and preventive actions. Functional ability according to Rudnicka, E., Napierała, P., Podfigurna, A., Męczekalski, B., Smolarczyk, R., & Grymowicz, M. (2020), comprises the health-related attributes that enable people to be and to do what they have reason to value' including a person's ability to meet his/her basic needs, to learn, grow and make decisions, to be mobile, to build and maintain relationships, and to contribute to society.

During this new normal, the health care provider, in helping the older persons, are faced by two realities, that of the aging process and the presence of COVID 19 pandemic. These two events affect the social determinants of health.

Aging Process

Aging process is characterized by biological and psychosocial changes. Biological changes are best described by the disposable soma theory (Kirkwood, 2008) which states that aging is not preprogrammed; it results from accumulation of somatic damage owing to limited investments in maintenance in repair. It results from the impact of the accumulation of a wide variety of molecular and cellular damage over time. This would lead to gradual decrease in physical and mental capacity and eventually these changes will then pose as growing risk of developing disease and ultimately death. But these changes are neither linear nor consistent, and they are only loosely associated with a person's age in years. Not all 70 year olds will be the same; others will enjoy extremely good health and functioning well, while others can be frail and require significant help from others.

Aging is brought about by the genetic and epigenetic factors (lifestyle and environment). Study on genomic aging in twins showed that genetics only account for 20-25 percent of an individual to reach the age of 80 + and this suggest that 75 percent to 80 percent is due to lifestyle and environment factors (Genomics of ageing in twins - PubMed). The lifestyle risk factors of physical inactivity, obesity, poor diet and alcohol intake and smoking are the factors commonly mentioned in the review of literature of the study on lifestyle predictors of successful aging (https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0219200.)

Aside from physical changes, ageing is also associated with psychosocial changes which include life transitions such as retirement, relocation to a more appropriate housing, shrinking world and empty nest (Eliopoulos, 2010). Retirement can mean decrease in financial capacity. Shrinking world which means decreased number of significant others such as their spouse, relatives, and friends due to death or relocation. Relocation to a more appropriate housing could be due to inability to maintain their housing by themselves thus they end up looking for a place smaller, cheaper and easier to maintain. In the Philippines, they either end up inviting one of their children and family to stay with them or the other way around; they are the ones who transfer to their children's home. Empty nest means that the couple are now left on their own because all their children have a family of their own. This can also be a reason for relocation. These life transitions are also considered when planning care for older person for these may reinforce their adjustment to the physical and psychosocial changes due to aging and illness thus facilitating recovery, adaptation and psychosocial growth.

One concept espoused by healthy aging is that it is a life- course perspective. Functional ability is an interaction between the older person and one's environment. Functional ability is dependent on how one responds to stressors that is present even from conception up to old age. At birth there are physiologic reserves which continue to develop as one ages. Physiologic reserve, according to McDermid, R. and Bagshaw, S. (2014) is the human body's complex system that allows the cell, tissue, or organ system to function beyond its basal level in response to increase in physiological demand thus allowing the individual to carry out its activity under stress. Increases in physiological demands is affected by the basal metabolism and stressors which are the effect of the environment and the lifestyle a person practiced. Based on the discussion of Kuh, D., Karunananthan, S., Begman, H. and Cooper, R. (2010 retrieved 2019) on life course functional trajectories, a healthy individual is considered to attain the peak physiologic reserve at the age of 25, after which the physiologic reserve starts to decline as the individual ages. This decrease however is not much noticed since changes are anatomical and structural changes in our body are happening gradually. The decline however will be dependent on how the person leads one's life. With healthy lifestyle, the decline will be gradual but with unhealthy lifestyle and illness the functional decline will be more accelerated. This concept implies that it is best to practice healthy lifestyle to prevent early depletion of physiologic reserve. Though practicing healthy lifestyle at an old age is never too late, it is best to start it while an individual is young to prevent rapid deceleration of functional ability.

Decreasing physiologic reserve brings about functional decline making the older persons more vulnerable and dependent, leading to a decrease in their well-being and quality of life. With aging in mind, the nurse's goals should be dependent on these levels of capacity. In the case of the older persons wherein there is loss of capacity, the nurse should try to reverse, stop or slow the loss and for those who have significant loss one should aim to compensate for loss of capacity. Thus health promotion in older persons is not only promoting health and preventing diseases but should also include preventing complications that can arise from the diseases.

Immunosenescence or decreased immunological reserve is one of the effects

of decreasing physiological reserves. Aside from being susceptible to getting the infection and suffer from it or die, this state of older persons gave additional restrictions for them in this time of COVID pandemic. In the Philippines those 60 and above are not allowed to get out of their house except in emergency and urgent situations. This brought some effects of the lives of the older persons. The United Nations (https://www.un.org/en/desa/policy-briefs) listed the following effects of COVID 19 on the older persons which were listed as: economic well-being, life and death, mental health, vulnerability, responders, and abuse and neglect. These effects will definitely affect how we will assist the older persons care for themselves. All these seem noticeable among older persons here in the Philippines. The inequity and diversity of this population group made some older persons suffer from all of it while others suffer only a few of the effects listed by the United Nations.

Knowing that the older persons are affected by the ageing process and the presence of pandemic, the best approach is person-centered and integrated care as suggested by WHO ((World Report on Ageing and Health; WHO, 2015). Care for older persons should be centered on older people which should be based in the perspective that they are individuals who have unique experiences, needs and preferences. They should be seen in the context of their daily lives, as part of a family and a community. They should be ensured to have dignity and autonomy that must be respected and embraced in a culture of shared decision-making. These will ensure their participation in their care thus eliciting compliance

Roles of the Nurse in Promoting Healthy Lifestyle

With a goal in mind and knowing the realities of the situation, how can the nurse assist the older person in maintaining a healthy and productive aging? Nurses who are frequently in close contact with the older persons are provided opportunities to assist the older persons in influencing them to prioritize their physical and mental health. The nurse plays several roles in order to engage them in practicing healthy lifestyles.

Being an advocate is one of the indirect care done by nurses for the older persons. Their advocacy role through involvement in activities related to older persons' health will assist in establishing environments that are age-friendly and programs that will assist the older persons to be healthy and productive member of the society.

The following are some of the activities done by nurses in advocating for the health of the older persons. In the past nurses held rally to have a law that will enact the establishment of National Center for Geriatric Health. The building was put up but due to lack of support of a law, this building became only a department of Geriatric Medicine of one of the tertiary hospitals. The clamor to have this National and Regional Geriatric health centers came back during the pandemic. The nurse became a part of the technical working group to justify the enactment of a law. As of this time, it has passed thru the lower house. It only needs to pass through the House of Senate for approval by the Office of the President.

Nurses are invited in several occasions by the different bureaus of the Department of Health. Health Human Resource Bureau was the nurses' partner in preparing nurses in caring for older persons. They were also invited in establishing the standards of facilities for older persons by the Health Facility Bureau. They were also invited by the Family Health Bureau in the Strategic Planning of Health and Wellness Programs for Senior Citizens (this is the term used for Filipinos aged 60 and above).

Nurses also joined professional nursing and multidisciplinary associations catering to the needs of older persons to advocate for the welfare of the older persons. In this way nurses advocate not only for the older persons but also for the profession as well since they are able to showcase what nurses can do in the field of gerontology and geriatrics.

Another role that the nurse has to fulfil is being a collaborator and a coordinator. The complex needs of the older person will require different services. Through referral to appropriate therapists for the physical, occupational and speech and swallowing concerns of older adults, therapies are provided. During this pandemic referral to the Social Worker and Transportation facilities are more needed to determine who needed social support and for conducting older persons to the immunization sites. For older persons who are hospitalized and for those discharged, nurses are the ones who relay to the client, family, and or receiving institutions the plan of care for the patient. This is part of transitional care; in doing so, continuity of care, prevention of complications, and possible readmission to the hospital are minimized if not avoided.

As a direct care provider, the nurse plays several roles to accomplish tasks needed to keep them healthy. This includes being an educator, a change agent, a researcher, and a consumer of research. As an educator nurses act as content experts in writing and reviewing health education materials. They also become teacher of trainors in regional areas of the country. The educator role occupies the biggest chunk when it comes to health promotion to improve the cognitive and behavioral skills of the older persons and the family and other health care providers. This is done through webinars and for those caring for older persons in the hospital; this is done at the bedside. Giving health instructions via FB page is another way of disseminating health care information.

As direct care provider, the nurse also acts as an educator, researcher and research consumer to bring about changes in the person's life. Some of the strategies done by the nurse during the pandemics are the following:

Wellness Strategies
Avoiding/ Modifying Risk Factors

In a longitudinal study published by Lancet (2020), they found out that there are 12 factors that can make an individual at risk for developing cognitive disorders and dementia. These factors could affect healthy aging as well. Among factors that put the older persons at risk for developing diseases, the nurse can only assist the older persons to avoid or lessen the modifiable risk factors. There are the "non-controllable" risk factors, such as genetics, gender, ethnicity, intellectual quotient or family background as well as the "distal" risk factors, such as economic background, socio-cultural determinants, education, air pollution, or exposure to noise or the sun for which the nurse will have difficulty or will be unable to address. Nurses can help older persons care for themselves if they assist them in avoiding and /or modifying risk factors.

Out of the twelve risk factors only

eleven (11) are modifiable risk factors, education is considered a distal risk factor. The modifiable risk factors are hypertension, hearing impairment, smoking, obesity, depression, physical inactivity, diabetes, low social contact, excessive alcohol consumption, traumatic brain injury, and air pollution. These risk factors could be avoided and /or minimized if the older persons are encouraged to observe healthy lifestyle. Healthy lifestyle is a vital element for healthy aging to allow them to survive longer and even live longer in better health despite the presence of age related diseases.

Reviewing studies on older persons and based on interviews of health care professionals, the most affected during this pandemic are physical mobility, nutrition, mental health and access to health care and information. These are some of the wellness strategies very applicable during the pandemic.

Promoting Mobility

The lockdown in the Philippines does not allow senior citizens to enter establishments and has been told to stay at home. This decreases the chance of being mobile. Enhanced mobility has a lot of benefits like lowering blood pressure, control blood sugar and it offers many other health benefits. In a study done during the pandemic, it was mentioned that there is an inverse relation between physical activity and depression, anxiety and quality of life; the higher physical mobility, the lesser experience of depression and anxiety and poor quality of life (Woods, JA, Hutchinson, NT, Powers, SK, Roberts, WO Gomez-Cabrera, MC, Radak,Z.,et al., 2020) Current guidelines encourage older persons to do at least one hundred fifty (150) minutes of moderate intensity aerobic exercise each week, or seventy five (75) minutes of vigorous intensity exercise (https://www.who.int/dietphysicalactivity/physical-activity-recommendations-65years.pdf) . Moderate exercise includes walking and swimming. The nurse should bear in mind that the type and nature of exercise should be dependent on the capability of the individual. According to CDC (https://www.cdc.gov/physicalactivity/basics/older_adults/index.htm) and physical therapist group older persons should do multicomponent exercise wherein exercise activities will enhance balance, endurance, strength and flexibility. Dancing is one activity that can include several components of exercising especially if the music is upbeat. In encouraging them to do the exercise those with neurological and cardiovascular conditions should first consult their physician before engaging on exercise specially the vigorous exercise. Some older persons have changes in their strength and righting reflex thus extra care should be observed to prevent falls and other related incidents. Even platforms and a handy steady chair should be available just in case they need to hold on to something or sit if they are too tired. Walking thirty minutes a day is a good form of exercise for older persons. It can help increase strength and improve endurance. For those who are lucky enough to have a walking area in their vicinity like those living in several subdivisions, they should be encouraged to walk, catch fresh air and natural light while observing safety recommendations provided by the national government. However for some who have no walking area in their vicinity have no choice but stay home. Some even mentioned not being able to do their required steps. For those who are very conscious of the number of steps required for adults, Center for Disease Control (CDC) recommend that most adults aim for 10,000 steps per day equivalent to 8 km or 5 miles. In US, 3000 to 4000 equates to 1.5-2 mile. They even categorized the number of steps into low active which is equivalent to 5,000-7499; somewhat active from 7,500-9,999 steps while active is equivalent to greater than 10,000 steps. For those who cannot get out of their house, they can do it within the confine of their homes. I tried sitting and doing movements of my hands, body, and legs while seated and it register on my smart fitness watch the number of steps, increase in heart rate and even register calories burned up. For those who cannot do the prescribed exercises due to illness, they should still try to be as physically active as their abilities and conditions will allow them. In doing exercise activity, it is always good to include your family to motivate both the young and the old to exercise and at the same time have some good bonding moments within the family.

Promoting Healthy Diet

For older persons in the Philippines, "Pinggang Pinoy" translated as Filipino plate prescribed 17% of protein, 17% fruits, 33 % rice and root crops, and 33% vegetables as suggested by the Food and Nutrition Research Institute. However,

the limitation imposed by COVID 19 has also affected having a healthy diet. The restrictions have influenced availability, access, and selection of nutritional food due, in part, to widespread closure of affordable food outlets in the country. For some food stores, it is not really mandated closure but due to limited customers they are forced to close.

There is no "meals on wheels" in the Philippines, but Bayanihan spirit, made it available to the poorest of the poor in the community. Individuals or group of individuals gather together cooked food and provide for those who are needy and cannot afford. Another bayanihan activity is the "Community pantry" wherein individuals or group of individuals shared rice, vegetables, eggs, sugar and other household needs are put in a stall in the community for others to avail of. Though this is helpful to temporarily get the daily provision, it is not really recommendable. It is more advantageous to encourage the older persons and their families to be more productive and self-sufficient. To do this, local officials should encourage people of the community to do backyard gardening or use the vacant lot in the vicinity for planting fruits and vegetables. It would also be a good idea to change the mind set of people by stressing that the indigenous vegetables like morringa (malunggay) and ladies finger (okra) are as nutritious as other commonly sought vegetables like broccoli. Philippine lime or calamonding (Kalamansi) instead of lemon is very rich in Vitamin C.

Talking about vitamins, Vitamin D has gained more attention for its usefulness in the body especially among older persons who can be prone to diabetes and sarcopenia. Vitamin D is needed for absorption of Calcium which is important for bone health. Lack of Vitamin D has also been found to be one of the causes of Diabetes. Adequate Vitamin D increases body's sensitivity to insulin which is needed to transport glucose into the cell. In the past it is believed that exposing to sun early in the morning helped the skin to process Vitamin D, however recent studies showed that it is best processed when the sun is shining brightly which is around 10 am up to 2 o'clock pm. Others say it runs counter to the prevention of cancer however for Vitamin D production for healthy dose; it will only take 20-30 minutes a day thus not enough to cause skin cancer.

For those who are able to buy the food they need, remember to adhere to the dietary requirements for older persons. Here are some tips for healthy food choices: eat plenty of fresh fruits and vegetables, frequent small amount of food, focus on high fiber foods, including whole grains, limit the amount of added salt and sugar, and avoiding or limiting unhealthful fats, such as transfats and animal fats. Doctors often recommend the Dietary approach to stop Hypertension (DASH) diet for managing blood sugar, hypertension, and overall wellbeing.

Maintaining Healthy Weight

Healthy weight is one of the goals of promoting physical mobility and healthy diet. Healthy weight according to CDC is having a body mass index (BMI) of 18.5 to 24.9. (https://www.cdc.gov/healthyweight/assessing/index.html). BMI is a person's weight in kilograms divided by the square of height in meters. Under 18.5 or 25 and above will pose harmful effects of the body. According to https://www.hsph.harvard.edu/obesity-prevention-source/obesity-trends, the percentage of obesity among adults has more than doubled over the past 30 years. It further stated that at the current rate, 50 % of American adults will be diagnosed as obese by 2030. The obesity does not only affect the appearance of a person but it does affect bone health. According to Kevin Fontaine, PhD, an assistant professor of Rheumatology at Johns Hopkins University (https://www.caryortho.com/the-impact-of-obesity-on-joint-health), being just 10 pounds above the ideal body weight increases the force on the knees 30-40 pounds with every step a person take. This is about an additional weight of about 3-4 pounds for every pound. This can contribute to the development of Osteoarthritis, a degenerative breakdown of cartilage and bone within a joint which can limit the mobility of a person.

One cause of obesity is overeating and eating unhealthy food. This is usually true when one is bored or stressed. In this case it is encouraged that older persons engage in activities that will get their mind busy to get their mind off the food. Playing with their grandchildren or helping them out in their school assignment/ project could be one way of keeping their minds off from the food. This will not only prevent obesity but it will also make yourself useful by being of help to the members of your household. It can also foster good relationship.

Another way of keeping mind off from food is engaging in planting of ornamental plants if you are able or doing it with some members of the household. Plants do not only keep your mind diverted but it also helps keep the environment green and clean. It can also be a source of income if you post it on Facebook and if others liked it, they will usually ask if they can buy. This is what two of my friends are doing.

Being underweight is another characteristic of unhealthy weight. In the study of Dr. Shelly Dela Vega (2020), prior to the pandemic, among 405 older Filipinos from NCR, Regions IV A, VII, XI, results showed that 4.4 % of the respondents were undernourished and 30.3% were at risk for developing malnutrition. Fourteen percent (14%) of the respondents are underweight. Being underweight can be especially serious for older people. It increases the risk of health problems, including bone fracture if one falls. This is due to lack of muscles and fats which absorbs the impact of fall. Being underweight also weakens the immune system, leaving an individual more susceptible to infections, and it increases the risk of being deficient in important nutrients such as vitamins and minerals (https://www.nhs.uk/live-well/healthy-weight/keeping-your-weight-up-in-later-life). Balancing healthy diet and physical mobility is indeed very important to maintain a healthy weight.

Avoiding/ Minimizing Alcohol Intake

The risk of increased blood pressure, blood glucose spikes, and weight gain are among other things brought about by high consumption of alcohol. Another effect of high doses of alcohol is the promotion of the increase of triglycerides when taken with diets extremely rich in carbohydrates (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc5038894). Triglycerides is a lipid component which is a risk factor of developing atherosclerosis. American Diabetes Association recommends a maximum of one alcoholic drink per day for women and two alcoholic drink per day for men. One drink would be equivalent to 12-ounce beer, or one 5-ounce glass of wine, or one 1.5 ounce of serving of spirits, such as whiskey, gin, or vodka. It would be best if one

can avoid alcohol, if desired, please stick to the recommended amount.

Promoting Mental Health

Mental health is as good as physical health. The physical distancing and the prohibition of getting out of the house as well as the non-entry to public establishments except in extreme emergency during this pandemic is placing a toll on the mental health of older persons. It is not the physical distancing per se but it is the inability to talk and socialize thus can possibly lead to social isolation. To prevent effects of social isolation, Dr. Michael Tan (former President of UP System), in his talk, recommended to ensure that life go on during this pandemic. He recommended practicing 3 C's. We should practice 3 C's which stands for Celebrate life, Commemorate, and Connection. Celebrating life includes continuation and making an effort to celebrate birthdays, prepare food even with only the members of the household as guest. To commemorate, find time to again celebrate events like time of coming of your favourite dog into your household and planning ahead for Independence Day and Thanks giving. The third C is keeping in touch with their social network. Safety measures should not discourage older people from keeping in touch with social network like via digital means if possible or even just through telephone/ celfones. Connecting with higher being is also important. Churches now are able to share their links for online mass.

Another way of promoting mental health is to keep mind active. Doing this will not only exercise the brain, remember: if you do not use it, you might lose it, but it can also divert your mind from the grim effects of the pandemic. Enhancing or learning new skills is one way of exercising our brain. It is always good to learn new skill as this can motivate your neurotransmitters to work. Another way of keeping the brain active is to engage in hobbies and activities that you enjoy or learn something new. Doing the same old thing does not activate the neurotransmitters thus providing less exercise for the brain. Other exercises that keeps brain active is playing mahjong or doing puzzles but do not let these activities make you sedentary. One word of advice, try to lessen listening to news about COVID-19 to keep your mind away from it temporarily.

Promoting Rest and Sleep

Rest and sleep is placed last in this article for it affects not only physical health but mental health as well. Older persons are required to have 6-8 hours of sleep to allow physical and mental rest. Lack or poor sleep is linked to physical problems such as a weakened immune system and mental health problems such as anxiety and depression. To have a restful sleep, several factors should be considered.

Assumption of position of comfort and good body alignment usually ensure good sleep. In a study done (https://pubmed.ncbi.nlm.nih.gov/1579788/) regarding the development of sleep position among humans they found out that older persons were noted to highly prefer lying on the right side. The preference was attributed to be related to the changes in the cardiovascular and respiratory functions among older persons (https://pubmed.ncbi.nlm.nih.gov/3774439/). There are positions that put into consideration the nature of illness of the individual. For individuals with gastroesophageal reflux disease, lying on the left side is advised to lessen pressure to internal organs. (https://www.sleepfoundation.org/sleeping-positions). Back sleeping is recommended to people with lumbar pain and neck pain (https://www.sleepfoundation.org/sleeping-positions).

Aside from positioning, it is recommended to observe sleep hygiene such as bedroom and bed conditions, avoiding stimulants and limiting fluids at night time. Another sleep hygiene recommended especially now during the pandemics is the digital detoxification. It was found out that the exposure to bright artificial light coming from television screen, digital gadgets, or bright alarm clock in the late evening can disrupt melatonin release (https://www.nhlbi.nih.gov/health-topics/sleep-deprivation-and-deficiency). Melatonin is a hormone that increases as nightime draws in and signals the body to prepare for sleep and helps an individual feel drowsy.

Having Vaccination

Vaccination enhances one's immune system and is fit for individuals who are immunosenescent. In United States (https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/adult-day-service-centers.html#anchor_1617147586201) 82% of adults aged 65 and older had received at least one dose of a COVID-19 vaccine. This led to the decline in the number of COVID-19 cases, emergency department visits, hospital admissions, and deaths in older adults, who had higher vaccination coverage than in younger adults, who had lower coverage.

However, here in the Philippines despite the prioritization of the government to vaccinate the older persons there is still hesitancy. These is due to two major reasons: fear of vaccination (the Dengvaxia scare resurfaced and the lack of information or infodemics in social media (too much information which could lead to further confusion and fear. Nurses have a big role in allaying the fear and decreasing hesitancy. Being an educator and communicator will help in providing good information. Another task that the nurse should practice is information hygiene. Information received should be sanitized first by discerning which information is factual. If unsure of the information, they should check the source, visit the internet to find out the veracity of information, search for evidences or call an expert.

In the interview done by UP Manila and featured in their weekly seminar, it was found out the older persons hesitancy or decision to be vaccinated can be influenced by their significant others.

Caring for the Caregivers

The family members and /or significant others of older persons are not only capable of influencing them in having the vaccination but also plays a big role in providing care for themselves. Caregivers are actually our partners in the care of the older persons. The quality of life of the caregivers will also affect the quality of life of the older persons.

Caregiving is very stressful especially in cases of dementia and other long term illness of the older persons. To avoid caregiver's burnout and compassion fatigue the caregivers should be taken cared of as well. Care of the caregivers include: enhancing the knowledge on the status of health condition of older persons as well as their caring skills for the older persons. These will help in enhancing caregiving. Cognitive and behavioral skills on self-care is also important, like how to relieve stress so they can withstand the stress of caregiving.

Combat Ageism

When a caregiver is stressed, it could lead to abuse and violence which was mentioned as effects of COVID- 19. Abuse and violence is not purely due to caregiver's stress. It could be due to ageism (stereotypes (how we think), prejudice (how we feel) and discrimination (how we act) towards others or oneself based on age. (https://www.who.int/westernpacific/news/q-a-detail/ageing-ageism). It further stated that "Ageism can change how we view ourselves, can erode solidarity between generations, can devalue or limit our ability to benefit from what younger and older populations can contribute, and can impact our health, longevity and well-being while also having far-reaching economic consequences."

The blanket resolution of not allowing the older persons to get out of their homes was seen as an act of ageism. Here in the Philippines, nurses and other professionals involved in the care of the older persons joined in a petition to allow well-older persons to go out provided they are following the national protocols. Educational activities about aging process and providing accurate information could dispel ageism towards older persons by the younger generation themselves. As Betty Friedan (https://news.stanford.edu/news/2000/november15/freidan-1115.html) mentioned, "Aging is not lost youth but a new stage of opportunity and strength". Ways to impress other generations on this can reduce ageism.

Lastly, the number of older person is continuously increasing and nurses have also the responsibility todevelop nurse-led model of care, implement, and evaluate to support healthy aging and inform policy makers involved in older adults. The author in her years of reviewing literature and in her practice was able to develop a model which she termed as LTM (Lydia T. Manahan) RICE Model of Care for Older Persons. This model was created in 1998, presented in several conferences and was also proven to be applicable in caring for patients with Dementia. RICE Model is a staple care for older persons in her dissertation in 2014. During this pandemic she noted that RICE Model is also applicable. This was presented to the Philippine Human

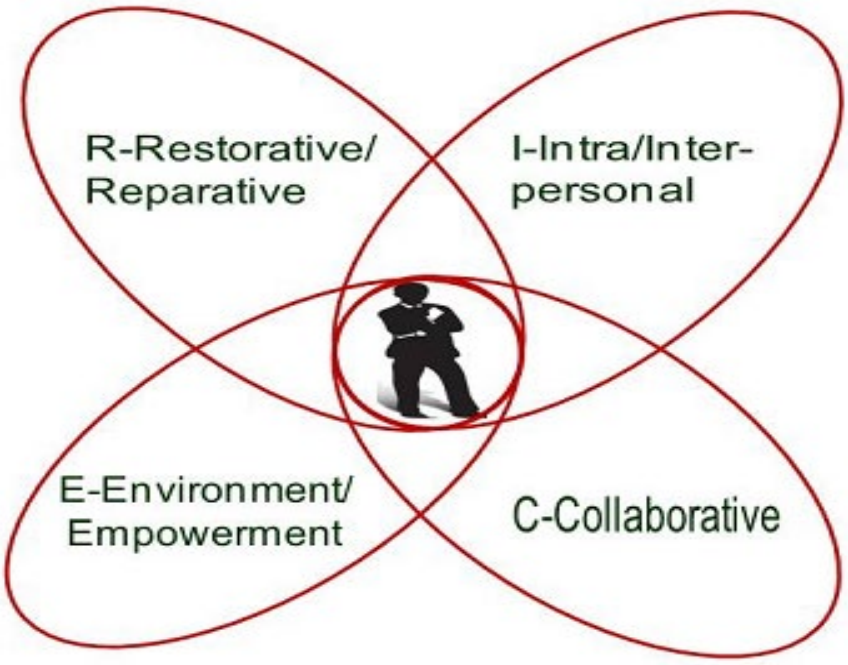

Fig. 1 LTM RICE Model of Care for Older Person

Just like an electric fan, if one component is missing, it will not provide the care appropriate for the older person

RICE Model stands for:

- **R** – Restorative- this looks into the physical care and addressing social determinants of health
- **I** - Intra/Interpersonal- addresses the psychosocial, emotional, cultural, and spiritual care
- **C** - Collaboration/ Coordination- to ensure that the care is integrated
- **E** – Empowerment- to enhance autonomy and resilience not dependence.

Using the RICE Model, it can guide the nurse to come up with a person-centered and integrated care for Older Persons and thus promote healthy aging.

Hopefully with the nurse actively promoting healthy lifestyle across lifespan, will lead to healthy and productive aging

Rights Commission (aging sector) in one of their town hall meeting and was adopted as one of their infographics.

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CONGRATULATIONS

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U.P. BS Zoology, U.P. College of Medicine: 1977

Harvard University School of Public Health: 1985

Global Health, Nutrition and Development Specialist

The 2021 UPINHF International Health Professional Excellence Awardee

Your Service to God and to Humanity is Laudable
You & Raija inspire others!

Dr. **Milton B. Amayun** has over four decades of experience with child survival, maternal health, HIV/AIDS and other public health programs in both development and humanitarian emergency settings. He has worked in Asia, Africa, Latin America, the Middle East, Eastern Europe and the United States. Raija is also an MD. She is from Finland. She and Milton married in Thailand in 1982 while they were working in the refugee camps.

With love and admiration

The SMITKA Family
The KVECH Family
The AMAYUN Family

"...As for me and my house, we will serve the Lord." Joshua 24:15, NKJV

Seven Days in June in the Heart of the Sahara

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In the summer of 1990, I was kidnapped and then left in the middle of the Sahara desert. This is my recollection of that ordeal, with the details fresh in my mind after 30 years.

My wife Raija and I, with our two young sons – Joshua, 5, and Jason, not yet three - were then living in a suburb of Los Angeles. I was Director of International Health Programs at World Vision, and several times during the year, I had to visit public health projects that World Vision funded in different parts of the globe. California weather heats up at the end of June, but this time, I was headed for somewhere even warmer: Gao and Menaka in northern Mali, where the temperatures were in the mid-40s C at night. The whole family would see me off every time I traveled intercontinentally, and this time we were all in the car playing word games, at the same time worrying whether we would make it to my flight on time.

That Monday morning, the freeway traffic to LAX was super-heavy. I ended up missing my Pan Am flight to Paris and my connecting flight to Bamako, Mali. To catch up on lost time, I was re-routed to Niger's capital, Niamey; directly north and across an international border into Mali lay my interim destination, Menaka. We were to travel to desert hamlets scattered across thousands of square miles of parched territory. Not too far away was the better known city of Timbuktu. Raija says that even then, as I kissed her and our boys goodbye, she had a premonition that something unusual was about to happen on this trip.

The trip to Niamey was uneventful and we crossed the border easily into Mali. The day after I arrived in Menaka, my ad hoc team of two foreigners (myself and a British lady nutritionist) and three Malians (two Tuaregs – a driver, a community development worker, and one Bambara nurse) set out from World Vision's project compound mid-afternoon. This was to avoid the blistering heat on the road earlier in the day. We packed into our Land Rover food, water, gasoline and several changes of clothes. The distances between the points we were to hit were long and we were not sure whether we would return to project base after two or three days or even more.

Historically in Mali, there is a north-south socio-political divide between the light-skinned Tuaregs of the north and the darker-colored Bambaras in the south. The conflict stemmed from the desire of the Tuaregs to create a homeland in the desert, but that would divide the country, and the Bambaras, who were more numerous, objected. Conflict was inevitable, and the central government in Bamako periodically crushed the aspirations of the Tuaregs in the north with a mailed-fist policy. Earlier on the day we set out, the Tuaregs had declared a rebellion against the central government based in Bamako.

After having been on the road about 40 miles into the Sahara, I could see, from my front seat beside our driver, a phalanx of fifty to a hundred young men suddenly blocking the desert trail we were following. I initially thought they were in the middle of a local polo game with sticks raised overhead. But they were not on horses and they were not playing. As we came closer, I slowly recognized that the sticks were bayonets and rifles drawn to inflict harm. We had literally driven into a local uprising.

We came out of our vehicle, and the Bambara male nurse was separated from us. I saw the men who got hold of him start dragging him and beating him up. Unfortunately, we never saw the nurse again. Later, we were told he was killed and his body dumped into a dry well.

The men then took the remaining four of us to another group of their compatriots. I recognized that this second group included better dressed young men in Western clothes. Their leader was a man in his mid-30s who wore a pressed short-sleeved top and slacks, not in a traditional boubou, the gown-like clothes of a West African man of distinction. He began to interrogate us, but he could not speak neither English nor French. His questions by default were directed to me

as I was the most senior in our group. An interpreter was summoned; he spoke only French. My companions were all trembling or too stunned to respond. My worry then was that I could not assess how good the interpreter would be. He might misunderstand, make a mistake, or mischievously misrepresent what I was saying.

The first question thrown at me was why foreigners like us were present in such a remote place on such a day as the one we were all in. "Are you spies?" the leader barked. I responded with a resounding, "Non, Monsieur," with an explanation drawn from all the French grammar I acquired from my alma mater, the Philippine Science High School, and the vocabulary I added during our assignments in Cambodia and Senegal.

"Why do you have a camera then?" He had noticed my camera that had an impressive lens. I responded that I needed to take photos so that I could use them for my reports. He then took the backpack I was holding, interested in what other tools I hid in it. He fished out the medical textbook I brought with me to read in my spare time. He asked what it was. I said it was my internal medicine book; he was not interested in it. He fished out another book – my Bible! Surely, this was going to be my end.

To distract him from recognizing the book he was holding, I brought out my calling card from my pocket and read my name and profession to him. Somehow I was not afraid and I wanted to be playful. I declared to him an offer: "This card has my name, title and telephone number. Once you win your independence, call me at this number and let us design a project to benefit your people!" Miraculously, he then returned everything to me, including the camera. I promised not to take photos. He seemed satisfied, and ordered his men to bring us to a prepared enclosure so that we would not go away.

In the enclosure, we met another local World Vision employee who was also apprehended earlier by the rebels. His vehicle had been taken away from him when he stopped. He told us that a public health physician was also apprehended that morning. The rebels wanted his vehicle, but he would not give it. They killed the doctor and got his vehicle anyway.

That night, we plotted what we should do next. Our driver and the World Vision community development worker who arrived at the enclosure before us said they were going to run back to project base. They knew the terrain and could report that we were alive. We, the foreigners, remained and one of the Tuaregs stayed with us as an interpreter for the rest of the journey. We slept fitfully that first night, not knowing until later what had happened overnight in Menaka where we came from.

The rebels confiscated our vehicle and those of others to attack Menaka town that night. They released everyone from the town jail, ransacked shops and the World Vision compound, gathering food supplies, spare parts, gasoline and other items. They killed many people who were in the way. Fortunately, the World Vision staff were warned by the townspeople and were discreetly hidden from the rebels while the looting happened. None of the foreign staff were harmed. The only thing left intact was the radio communications system which was later used by the two from our group in the enclosure who ran back to project base to report to World Vision headquarters in California the fact that "Milton and his team are alive in the Sahara, but their exact location for now is unknown."

Shortly after noon the next day, the rebels' convoy from Menaka arrived at our enclosure. I counted a dozen vehicles full of people and supplies. Some of the vehicles had blood smeared on their sides, indicating that people were shot or harmed. I suspected that the additional people were the released prisoners. The rebels seemed to be in a hurry. And their leader did not forget us. He summoned me and through the interpreter abruptly asked me, pointing north, "Are you coming with us?"

Not knowing where they were going, I promptly again said, "Non, Monsieur!" That meant we were on our own; we were going to walk our way to safety – without food, without water, and without any means to communicate with the outside world. In this part of the globe, there were no definite road maps and the terrain was unfamiliar to all of us. There was no telephone connection with the outside world.

For the next three days, we walked in the desert. We survived by looking for any shelter like small shrubs or dead tree trunks during the hottest hours of the day. For water, we survived by following a dry river bed. There is water if you dig deep enough into the sand. Some of my most memorable recollections during the four days and nights include the following:

• We encountered a boy who had just dug up a hole in the sand and was giving water to his flock of goats from the murky water. We approached him with anticipation as we were thirsty to the core. I looked into the can he was using to draw water with, and I saw the turbidity in it. I said to myself, I am a public health physician, a graduate from the Harvard School of Public Health, and I know I should not be drinking this water, but I was so thirsty that I drank it with a prayer. "Dear God, I am drinking this dirty water because I am dying of thirst. I may still die of dehydration if I contract diarrhea, but I am bargaining for a few hours." After drinking, I looked back to the hole where the water came from. The young boy had his feet soaking in it!

• The Sahara, believe it or not, is not all sand. It has rocky parts and some desert-resistant plants. And among the rocks and gravel, I found shells and fossils that indicate it was once under the sea. I collected shells as I marveled at how the desolate landscape had changed – probably over many centuries!

• My worries were most acute at night. We took advantage of walking during the twilight and dawn hours, but we had to sleep as well during the night. I imagined wolves and hyenas – or even rattlesnakes – attacking us while we slept. I calmed my thoughts as I remembered my mother's blanket which had an embroidered prayer, "Lord, I lay me down to sleep, I pray the Lord my soul to keep. If I should die before I wake, I pray the Lord my soul to take." Nothing nightmarish happened during the three nights we were on our own. I simply entertained myself counting planes flying from the southern African capitals towards Europe until sleep overcame me.

• The thought of being so alone, stripped of all but faith, humbled me. I had a solid education, including being a doctor and a graduate of Harvard. I worked for an organization with presence in 100 countries. I had some US dollars in my backpack. All were useless in my

situation! I was only drawing from my faith in God, and I rested in the assurance that He was going to preserve me for His purpose.

Early on the fourth day after being left in the desert by the rebels, I realized that beyond that day, we might as well give up walking if we were not going to be shortly rescued. I woke up before it was light, and went a distance from my two other companions. I prayed like never before, bargaining with God for what should happen next.

I stated boldly, "Lord, if this is now my time to come home, I am ready to die. You know my past, present predicament, and my future. I am in your hands." I struggled to bargain for a different outcome, "Lord, I have a young wife back home and two small boys. Should you think they still need me, please spare my life. However, the final decision is yours." I repeated those prayers in tears again and again, until it was dawn. At some point, I felt a warm embrace that I had never felt before. My situation had not changed, but I felt God was communicating to me that I was going to survive the Sahara. And I looked forward to how He was going to send me a miracle.

Shortly after 7:00 a.m., a man came across our path with two donkeys. Through our Tuareg colleague, I struck a bargain with him. From the money I had, I was going to give forty dollars. He would be responsible for walking us to a safe point for rescue by World Vision local staff. He would receive the rest of the money I had once he completed the task. He had a kind demeanor, and he accepted the deal gratefully without any questions.

For two days and two nights, the man with the donkeys took care of us. He fed us, using bread that he cooked over a bonfire. I did not know where the water or flour came from, but the bread tasted good after our not having eaten for three days and nights. He guarded us while we slept at night, keeping the bonfire going to make sure no wild predators, especially the hyenas, were going to attack us. Best of all, he knew where we were going to get rescued.

So we walked until we reached Intidayni, a project site we were going to visit originally. Not long after our arrival, I had to go to the toilet, dreading the diarrhea I had been thinking would come sooner. Instead, I was constipated due to the partial dehydration I suffered from while in the desert.

Before 5 p.m. that day, a squadron of the Malian military arrived to fetch us. They had received the radio message from the World Vision satellite office in Intidayni that we were alive. I also gave the rest of my money to the donkey man, who returned to walking to where he came from.

In 12 hours, I was back in Bamako, and that same evening, I was on a flight back to Los Angeles. I hugged my family and thanked God I was still there for them because God has wanted it to be so.

I learned later on that Raija was in an emotional roller coaster as she received the message that "Milton is alive but nobody knows where he is in the Sahara." This confirmed her premonition of an unusual trip for me earlier that week. She then contacted relatives and church friends to pray for me. My brother, who is also a doctor, asked her if she was going to pack and leave for Mali to help search for me. She refused, knowing that I was aware that my job was a calling and that she had seen where I was injured in Thailand, and yet I was still in humanitarian and development work. She also knew that Mali was unfamiliar to her. To this day, she is my heroine for taking our boys as her priority – as God communicated to me in the desert.

Months after, Raija was asked to visit the World Vision Asia Regional office in Makati. There she was handed a checkbook with my and her name. It was picked up by someone who found it beside the desert road where the contents of the roll-aboard I left in the World Vision compound were dumped.

The above story has been – in human terms- the lowest point in my career. But looking back, I will not exchange the experience for anything else. It was a time when I wrestled with God and He embraced me, confirming that in the most unlikely place to find Him, He was there! And that is why even after thirty years, Raija and I are involved in serving the poor, honoring them and the God Who called us to international ministry. That is also why after working 33 years overseas, we returned home to serve in the Philippines.

Congratulations to

Cora de Los Angeles Añonuevo, UPCN '72, PhD

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Our class is very pleased and proud of you , your contributions and achievements in nursing education, research and service specially to community health of the less fortunate in our society.

More power to you!!

UPCN 1972 Classmates

Nursing Activism: Working Towards Social and Health Equity

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Introduction

Nursing activism has become a discourse that has resulted in more understanding of the role of nurses in promoting social and health equity. In 2017, the International Council of Nurses (ICN) underscored the significant role of nursing in helping to achieve sustainable development goals (SDGs), especially in relation to SDG 3: Ensure healthy lives and promote well-being for all ages. But nurses work beyond this goal, knowing that the delivery of other SDGs such as ending poverty and improving education have a marked influence on the health of the individual and the community. These are referred to as social determinants of health (SDH). The World Health Organization (2016) defined SDH as the conditions in which people are born, grow, work, live and impact on the conditions of health and daily lives. The determinants of health include the social and economic environment, the physical environment, and the person's characteristics and behaviors. These conditions influence a person's opportunity to be healthy, his/her risk of illness, and life expectancy.

According to Marmot, Bell et al. (2008), the maldistribution of health care or not delivering care to those who most need it is one of the social determinants of health. There are wide disparities in the health status of different social groups. The lower an individual's socioeconomic position, the higher the risk of poor health (WHO, 2017). Social inequities in health – the unfair and avoidable differences in health status across groups in society –result from the uneven distribution of social determinants.

To help close the equity gap within a population, WHO has indicated that the most efficient way is to address the health and health care needs of the most disadvantaged, most vulnerable, and marginalized. Closing the gap can be achieved by having a solid foundation in primary health care (PHC), leading to health equity and improved population health outcomes (Browne, AJ et al., 2012). Health equity is defined as the absence of systematic and potentially remediable differences in one or more health characteristics across population groups described socially, economically, demographically, or geographically (WHO, 2008; Baum, 2008).

The World Health Organization (WHO, 2008; WHO 2021) asserts that PHC embodies the principles of universal access, equity, and social justice. Effectively operationalizing PHC reform necessitates reorganizing service delivery around people's needs and expectations, securing healthier communities through better public policies, and remodeling leadership for health around more effective government and the active participation of key stakeholders.

As part of their professional practice, nurses engage in activities to effect a systemic change. They facilitate new development both as activists and agents of change themselves and guide and advocate for individuals, groups, and communities working for social justice. They can spearhead innovative projects with the ultimate aim of improving the lives of individuals or groups suffering from disparate, discriminatory, or oppressed economic, political, cultural, or environmental conditions (Kaminski, 2014; Hilfinger Messias, 2017).

Early Nurse Activists and Social Reformers in the West

Back in time, nursing pioneers understood the power of their influence to revolutionize health care and the nursing profession. Florence Nightingale (1820-1920) devoted herself to reforming nursing and public health in Britain and the world. Mc Donald (2006) described her as an astute political actor. Nightingale used her connections for her causes, writing many letters to politicians and statesmen, advocating for a better health system. She was the champion in showing the policy makers of her time that meaningful change can come from strong political will. Mc Donald wrote:

"A fine example of Nightingale's activism, tempered with social science research, can be seen in the introduction of trained nursing into the dreaded workhouse infirmaries of Britain. These institutions, run by the local Poor Law board, were the "real hospitals of the sick poor," housing five patients for everyone in a regular civil, i.e., fee-paying, hospital. This, in my view, is one of the most important achievements of Nightingale's career, and the British National Health Service is scarcely imaginable without some such reform as hers being first instituted."

Aside from Florence Nightingale, Lillian Ward, Dorotea Dix, Mary Breckinridge and other early nurse activists promoted health, prevention of disease, advocated for patient's rights, and reformed public policies for the poor, the oppressed, and the vulnerable.

Lillian Ward (1867-1940) was described as a practical idealist who worked to create a just society. She fought for public health care, women's rights, and children's rights while running the Henry Street Settlement. She coined the term "public health nurse" to describe those who worked outside hospitals in predominantly poor and middle-class communities (Rothberg, 2020).

Dorotea Dix (1802-1887) fought for the right of the indigent mentally ill through vigorous lobbying in front of the legislators and the corridors of the U.S. Congress. She won many battles in court using detailed and extensive data of extreme conditions in jails and almshouses. Through her sustained efforts, she got the support of Congress, getting the poor individuals to have improved conditions (Norwood, 2017).

Mary Breckinridge (1881-1965) was known as a rural health care pioneer. She dedicated her life to nursing among the poor, especially children, in Kentucky. She founded the New Model of Rural Health Care & Frontier Nursing Service, which delivers health care to un-

derserved rural women and children. The organization, which significantly reduces maternal and infant mortality rates, still operates today (Bullough, 1988).

Filipino Nurse Leaders, Reformers, and Activists

Anastacia Giron-Tupas (1890-1972), known as the Dean of Philippine Nursing, was the first Filipino chief nurse and superintendent of the Philippine General Hospital School of Nursing. In 1922, she founded the Filipino Nursing Association (FNA), the precursor of the Philippine Nurses Association (PNA), and became its first president. In the same year, she was appointed director of the UP Post-Graduate School of Public Health Nursing. She wrote the book, History of Nursing in the Philippines that details the development of nursing in the country during the first half of the 20th century (Borromeo, 2017).

Spanning six decades of her life, Giron-Tupas "exemplified courage, bravery, fearlessness, open-mindedness, and innovation. She was a true nursing visionary. Her lived experience has value for us as she advanced nursing and society during her time, and she, therefore, has had a lasting effect on us, both as citizens and as nurses in contemporary society." (Borromeo, 2017, p.12).

Julita V. Sotejo (1906-2004) is perhaps the best-known Filipino nurse in many countries worldwide. She "possesses a keen, analytical mind and intellect, integrity, and what only a chosen few can lay claim to a vision." (Tungpalan, 2001, p. 12).

Sotejo believed her dream of a school of nursing in the University of the Philippines (UP), declaring that the preparation of the professional nurse should be within the institution of higher learning. After two full years of labor, UP approved the four-year degree course, the Bachelor of Science in Nursing, on April 9, 1948. In outlining the preparation for professional nursing practice, the curriculum emphasized that the training of nurses must be for the broad field of community nursing service. It should include understanding the effect of nutrition, housing, employment, income, class, recreational activities, and so forth on individual and national health (Tungpalan, 2001). With this curricular content, Julita V Sotejo was advance in her thinking. She desired that the graduates understand the relationship of social, economic, political, and cultural factors to health.

Minda Luz Quesada (1937-1995) was a luminary, a shining star in the nursing profession, an activist, and a constitutionalist. She was very outspoken against the exploitation and oppression of nurses. In light of such a disturbing situation of nurses, Quesada believed that the best way to address the problems of nurses is through collective action. She involved herself in union work – in organizing, educating, and mobilizing nurses.

Quesada was always critically aware of the health situation of the Filipinos and would place the role of nurses in the promotion and protection of people's health. Through the Ad Hoc Committee on Primary Health Care of the Philippine Nurses Association, she initiated a demonstration project in Parang, Marikina. The project facilitated the development of local people to address their newfound capability toward the resolution of health and health-related problems.

As lone health sector representative in the Constitutional Convention in 1987, she pursued that the principle, "health as a basic human right," be enshrined in the highest law of the land. She earned the name "Gabriela" because she fought for pro-Filipino provisions that pertained to the national economy and patrimony, social justice, and human rights.

Recognizing the issues in society today, nurses can imitate the examples of past nurse leaders, their dedication and determination to influence changes that will advance the nursing profession, improve the health care system, population health outcomes, and society in general. Their lives embody nursing activism –they challenged the status quo during their time, were not afraid to express themselves, worked and took risks to achieve their vision, were trailblazers and champions of health care and social justice.

My Political Awakening

The life stories of Nightingale and other exemplary nurse leaders were an inspiration to many nurses like me. My nursing education and training shaped my mind, heart, and hands to be aware of familiar sights during my time – in the early seventies at the beginning of Martial Law-- hunger, homelessness, violence, maternal and child deaths, lack of health resources, etc. The slogan "Serve the People" instilled in me the duty to give back to the communities that nurtured my growth as a person, nurse, and citizen. I wanted to be part of the movement to transform the oppressive societal conditions that created social and health disparities. I engaged in critical discussion and reflection and envisioned possibilities for a better society rooted in the ideal of human rights and social equity.

My journey to becoming a nurse activist continued as I worked as a nurse-trainer of a non-government organization or NGO that ran a Community-based Tuberculosis Control Program. That was in 1978 when Primary Health Care was born in Alma Ata in Russia. My interest in community health, reaffirming the values of my profession and the given social context at that time, led me to work in poor and underserved communities in the Philippines.

Our project sites were situated in far-flung and isolated areas, from north to south of the country. One of the areas that I attempt to describe here is the Cordilleras in Luzon. We had to walk up the rugged mountains and cross the mighty Chico River to reach the place. There were no roads; there were only narrow trails. I worked with a team-- a doctor and a medical technologist. We settled in a barrio with no electricity, no running water supply, no means of communication, no transportation, no health facilities, and no infrastructure whatsoever. These scenarios challenged us, but we remained undaunted.

As a nurse, I welcomed these challenges. I envisioned myself living with the people, sharing my knowledge and skills, and conducting health activities, especially preventive care like giving immunization to children. The top health problems in the '70s were mostly communicable diseases like pulmonary tuberculosis, which could be managed not only by drugs but also by preventive measures. Our team was armed with the principles and strategies of primary health care (PHC). We believed that PHC addresses the determinants of health and focuses on the interrelated aspects of physical, mental, and social health and people's well-being throughout their lifespan.

My scope of responsibility went beyond individual members of the family to the health of the whole village. And because I dealt with the entire communi-

ty, I needed to figure out how to mobilize and approach the community as a whole. I conducted meetings with official leaders and respected non-official leaders of the village with our team, with ordinary folks and traditional healers. In short, I imagined myself not only as a nurse but as a community organizer.

Living with and learning from the people enriched my life. Community organizing allowed me to appreciate indigenous leadership, addressing people's self-interest, work through established traditional networks, empower people through a shared decision-making process, and effect change.

Nursing Sectoral Action

In-between my community work, I was involved in the issues of nurses. Nurses were struggling for their right to just compensation and favorable condition of work, still, the same issues and problems that they face today. I became involved in organizing nurses for unionism in both government and private hospitals. Then-President of the PNA, Dean Mary Vita Jackson, and Vice President, Dr. Minda Luz Quesada, who were both committed and persuasive nurse leaders, initiated labor education seminars to raise the level of consciousness of nurses. We urged nurses to unionize, to collectively speak up as one voice as there is strength in numbers.

With Quesada at the helm, we spearheaded and campaigned for the passage of the Magna Carta of Public Health Workers, the first of such kind worldwide. This Act (Republic Act No. 7305) aims to promote and improve health workers' social and economic well-being, living and working conditions, and terms of employment (Official Gazette).

The Continuing Challenge

The challenges continue up to the present. Although improvements have been made in population health status and health care, many issues have yet to be addressed to achieve high-quality, accessible, affordable, and efficient health services. It is common knowledge that many people still die without seeing a doctor or a health professional. People die primarily due to preventable diseases such as tuberculosis, dengue, malaria, and malnutrition. And over recent years, cases of non-communicable diseases such as cardiovascular disease and diabetes are increasing. Health facilities are scarce and unavailable to many. Health care and health services are beyond the means of marginalized and poor Filipinos.

Through my involvement with the Health Futures Foundation, Inc. (HFI), a non-government organization, I have the opportunity to go to remote rural areas and poor urban communities. Guided by the primary health care philosophy, HFI implements inclusive, equitable, and cost-effective programs. It has been working towards achieving access, quality, and equity in health and development. With the current pandemic. HFI has built community isolation units in areas where COVID 19 cases are high. It has been developing health educational materials available on varied social media platforms for nurses, other health workers, and laypersons.

Effecting Change: Advocacy and Activism

Many times, I am being labeled an "activist"; sometimes, an "advocate." Either way, I am called, it is a badge of honor. Both activism and advocacy are tools that are used to bring about social or political changes. However, there is a distinctive difference between activism and advocacy based on how these changes are brought about.

Advocacy refers to the act or process of supporting a cause or proposal (Merriam-Webster). For instance, we advocate for patients' rights, protecting the environment, or against tobacco use. Activism is the action of using a thoroughgoing campaign to bring about change (Merriam-Webster). Activism aims to create and produce change across all dimensions: from personal-- to political, cultural, economic, social, and environmental. The so-called "demand-driven activism" brings a change in policy, practice, or operations through staging mass demonstrations and rallies. There is also activism that manifests itself by creating alternatives within society to meet people's needs, such as housing, food, livelihood, and education (Permanent Culture Now).

In defining its crucial and distinct contribution to healthcare, the nursing profession has long promoted advocacy as a key role. Section 8 of the Code of Ethics for Filipino Nurses issued by the PRBON in 2004 states that: Registered Nurses are the advocates of the patients. They shall take appropriate steps to safeguard their rights and privileges.

We are already advocates for our clients. Many are leaders in their work settings and communities. Some have made

sacrifices and have dedicated their lives to helping others. Throughout nursing's history, nurses have responded to the call to serve their country and communities in times of crisis (American Nurses Association, 2020). And now, the Covid 19 pandemic has put frontline nurses at risk of infection, yet they have shown firm courage to care for their patients. Regrettably, in several instances, nurses have taken to the streets to protest the lack of needed personal protected equipment (PPE) and a safe work environment. They demanded support from hospital administrators, public officials, and the health department.

It makes sense that we strive to be politically active and involved citizens. We can expand our perspective to see that we can make a valuable impact beyond the bedside or beyond the corners of health care facilities. We can be nurse activists!

The International Council of Nurses (ICN, 2017) urged nurse leaders to challenge policies based on health equity. It states that "nurses, as individual practitioners, should consider the social determinants of health as a priority for improving health and health care and reducing inequities in health outcomes for different groups in society." From 2017 to the current year 2021, the ICN theme for Nurses' Week, "Nurses – A Voice to Lead," has been the slogan that has guided nurses worldwide. Wherever they find themselves, nurses are encouraged to take an active role in achieving the United Nations Sustainable Development Goals. Since nurses are most closely involved with patients, their families, and communities, they have deep knowledge of the underlying causes of ill-health.

Our mission is a continuing challenge. Activism is a collaborative advocacy with a concrete, comprehensive plan of action. It is advocacy, plus action. If nurses at every level of practice and across settings come together to solve issues such as higher health budget, safe and quality care, adequate staffing, just compensation for nurses – to larger issues – working for community livelihood, employment and job security, curtailing disasters, or addressing the social determinants of health, we can help bring social and health equity closer to reality.

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Shifting an Intensive Community Health Nursing Course into Online Learning during the COVID19 Pandemic: A Case Study

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Abstract

Several studies have been conducted on the transition of learning activities to online platforms but there has been limited studies specific to community health nursing. Hence, this case study aims to: 1) describe the experience of shifting an intensive community health nursing course into an online learning environment; 2) identify issues and challenges encountered in the implementation of alternative learning activities. A case study using review of records and reflections of faculty in-charge. The conceptual framework of factors that influence e-learning in health sciences education was used as a guide in the analysis. Shifting the course online involved a review of the competencies for Intensive Community Health Nursing and the Instructional Design. This was followed by an assessment of the readiness of students and community partners to shift to online platforms as well as generating support from the university. Issues and challenges arose from the existing government and university policies, accessibility and availability of resources including internet and computer access especially for the rural communities involved, competing priorities in coping with COVID19 at the personal and community-level, and expectations in the activities reflective of demonstration of the required competencies. Activities related to community health program management, participatory research, capacity-building and supervision, and family health nursing have been conducted fully online. However, revisions are still necessary to ensure leveled expectations, flexibility of plans, and mechanisms for supervision of students within the greater context of national, local government unit, and university policies. Having close communication and coordination with personnel on the ground were critical in deciding suitable activities.

Introduction

The relevance of community-based health programs has been strongly emphasized with the global imperatives for the management of communicable and non-communicable diseases. With its competency-based curriculum, the UP College of Nursing has been in partnership with the local health teams and local government units addressing the multifaceted nature of health problems in selected rural municipalities in Cavite. These initiatives emphasized the role of academe-practice-community partnerships in achieving better health and social outcomes, as well as provide nursing care at the different levels of clientele (Tomanan, Mabale, Abad & Bonito, 2020). Since 2012, community-based health programs have been developed and implemented within the context of the Philippine Package of Essential NCD Services (PhilPEN) through the UP Community Health and Development Program (University of the Philippines, 2017). As indicated in the memorandum of agreement, partnership between UP and the municipalities of Amadeo, Mendez, Indang, General Aguinaldo (previously called Bailen), and Alfonso will terminate by March 2020. As preparations are being conducted to move to another set of municipalities, the activities and the associated student placements have been hampered by the COVID19 Pandemic.

Both local and international nursing regulation agencies require a specific number of hours for graduates to be able to sit in the licensure exams (California Board of Registered Nursing, 2015; Commission on Higher Education, 2017; Nursing Council of New Zealand, n.d.; Philippine Regulation Commission, n.d). For example, the Commision on Higher Education requires a total of 1,836 contact hours in the clinical area throughout the BSN program (Commission on Higher Education, 2017). The disruptions brought by the pandemic have spurred the partnership to explore remote collaborations to continue to provide services on one end, while providing learning experiences to the students.

Several studies have been conducted on the transition of learning activities to online platforms but there have been limited studies specific to community health nursing (Neupane, Sharma, & Joshi, 2020; Ramos-Morcillo et al., 2020; Regmi& Jones, 2020). Hence, this case study aims to: 1) describe the experience of shifting an intensive community health nursing course into an online learning environment; 2) identify issues and challenges encountered in the implementation of alternative learning activities.

Method

This paper reports a case study using review of records and reflections of faculty in-charge. The case study method was utilized since it allows for the analysis of important factors, processes and relationships within a particular context and phenomenon of interest. It allows for the description of events wherein the researcher has limited control but from a real-life standpoint (Rashid et al., 2019). Records were reviewed from the preparations of the course to its implementation and evaluation. These records included the instructional design in the UPCN Competency-based BSN curriculum, course syllabus, video recordings of faculty, student, and community partners meetings, materials uploaded in the course learning management system,

results of the readiness surveys, feedback from the students, communications to and from the university administration, and policies regarding flexible learning during the pandemic. The goal is to exhaustively describe salient processes that were implemented during these activities. The conceptual framework of factors that influence e-learning in health sciences education was used as a guide in the analysis (Regimi& Jones, 2020).

Results

Competencies for Intensive Community Health Nursing Experience

The intensive community health nursing course (N121.2) has been traditionally eight weeks long where the students stay in a rural community. Currently the course is being implemented in General E. Aguinaldo (Bailen), Cavite where various colleges are also working together through the UP Manila Community Health and Development Program (CHDP). The expected competencies of the course revolve around using public health tools in planning, implementing, and evaluating community-based health programs using a Primary Health Care Framework. Other competencies expected are on conducting participatory research, capacity-building through training of community health workers and partners, provision of direct care through the health center/ rural health unit, and family health nursing. As the final and integrating community health nursing course in the BSN program, students are expected to take care of individuals, families, population groups and the community as a whole with a broader appreciation of the social determinants of health.

Revisions in the Instructional Design

The instructional design of the Intensive Community Health Nursing Course has been laid out in the monographs of the UPCN Competency-Based Curriculum. However, in March 2020, lockdowns were implemented due to COVID19 thus preventing face-to-face classes. This has spurred the idea of shifting the course online. The competencies were reviewed by the faculty members in charge of the course in terms of what can be demonstrated online and which ones would be limited. Consultations with the head of the teaching program and the Dean were done. It was agreed that the expected competencies remain the same, but the teaching-learning activities be modified.

In terms of health program planning, implementation, and evaluation, the conduct of the community diagnosis involved the review of records on the community needs assessment done by the previous group of student nurses. Interviews and focus group discussions with barangay officials and local health personnel were to be done online through video conferences. Participatory planning was expected to be done using the same platform. Implementation of health programs will be limited to non-contact activities such as the use of social media and printed posters for health education. A process evaluation on these non-contact activities in terms of fidelity, acceptability, and reach were to be carried out.

The students were to work on COVID19 and non communicable diseases as these were the expressed needs of the communities based on the assessment done by the previous batch of students. To supplement the students' knowledge on COVID19, webinars were planned on public health action areas in response to pandemic. Health experts and local government officials were invited to speak to enable students to appreciate what is happening on the ground. The nature of the proposed alternative learning activities were geared towards the promotion of social distancing, contact tracing, managing of a quarantine facility, protection of health workers and the public at large, and continuation of disrupted work on the Philippine Package of Essential Services for Non Communicable Diseases (PhilPEN). Services offered under the PhilPEN consisted of risk factor assessment, screening for major NCDs, lifestyle-related interventions, provision of medications, and monitoring of known cases among others.

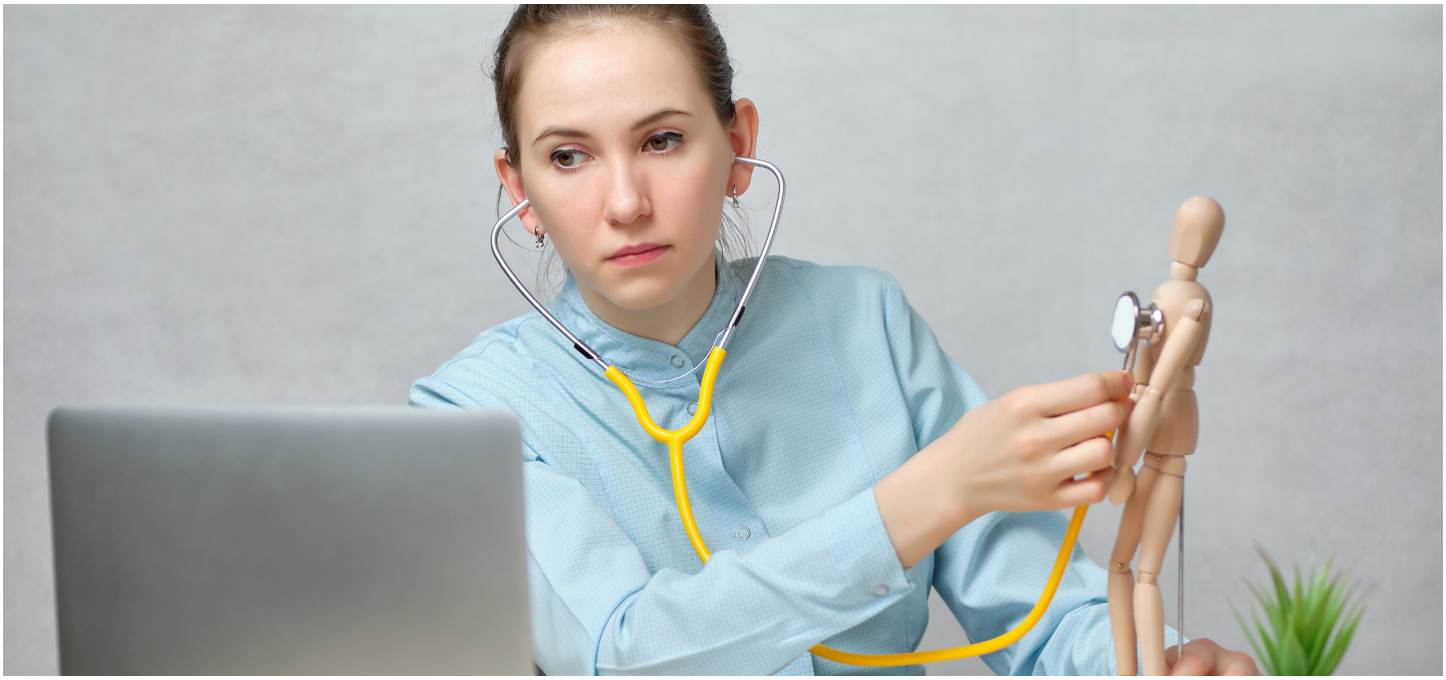
For the competencies related to participatory research, the students were asked to choose a relevant topic that will involve online data collection. In terms of the capacity-building and supervision competencies, the training of Barangay Health Workers (BHWs) on the implementation of the Philippine Package of Essential NCD Services had to be shifted online. An online contact tracing training was also proposed. Students were to conduct remote supervision with their partner BHW using previously-collected training needs assessment data.

In terms of Family Health Nursing, the students were asked to identify 5 families where they were to deliver interventions online. The faculty were cognizant that there may be limitations in the demonstrations of competencies regarding physical assessment, assessment of environmental hazards and others which may require ocular survey. Limitations may also exist in terms of the data they can generate from the patients as these will be mainly those from interviews. Interventions may be limited to health education in the absence of the usual home visits. The health center/RHU duty was initially planned to be replaced with simulations on the procedures involved in managing the said facility however it was not possible during that time.

The plans of activities were presented to the Director and personnel of the UP Community Health and Development Program. This was an essential step as the CHDP had people on the ground which coordinated closely with the local government unit. From the outset, the activities were acceptable to CHDP but these have to be reviewed by the local government unit for their approval especially in terms of feasibility. These activities were planned to be implemented between June 1 to June 30, 2020.

Readiness of students and community partners to shift to blended platforms

An online survey was conducted to assess the readiness of students and community partners. Based on the survey of the graduating students enrolled in N121.2 (n=24), nearly 46% each are within NCR or in Luzon but outside NCR. The remaining students are in Visayas and Mindanao. Current COVID19 travel restrictions will make it improbable for many students to come for in-person classes. Half (50%) of them reported difficulties in performing at least one of their daily activities. The data suggests the degree of remote supervision and support needed by the students as they cope with COVID19-related disruptions. A majority of the students (71%) were currently financially stable but unsure of the next 3 months. Close to 10% were experiencing financial difficulties. These may imply the proportion of students needing prompt graduation to be able to contribute to their family's economic productivity. Majority of the students (63%) are willing to spend PhP



50 ($1) for 3 days, while a few reported lack of financial resources for an internet connection. Fifty pesos is only good for 1G which is insufficient for the nature of alternative learning activities that are internet-intensive. The survey did not account for expenses on school-related phone calls. The strength of their internet connection were also variable, with the majority (63%) being able to support video conferences with some interruptions, followed by 29% who can only use it for sending emails and using online platforms such as UVLE. Around 3 students did not have laptops or computers at their homes/place of residence. The same number of students did not have access to internet connection. The students were also consulted on the feasibility of the activities listed in the online shift.

In a survey conducted among 50 barangay health workers and community organizers in the 8 barangays handled by the UP College of Nursing in General E. Aguinaldo (Bailen), eighty-two percent (82%) of them are willing to collaborate with students for at least 1 hour to at most 1 day per week. The remaining respondents were preoccupied with the COVID19 disruptions which amplified the challenges of their existing work on NCDs, Maternal and Child Health and many others. A majority of them (52%) reported having no budget for internet connection and poor connectivity. Only 2% of them have access to a computer. These suggested the degree of support needed by our community partners should a transition to blended learning be implemented. Around 40% of them reported that they would be available for collaboration at earliest on June 1 or the planned date of course implementation.

Generating support from the university

The proposal to support the shift to online for the intensive community health nursing course was approved by the UPM administration. The objectives of the drafted proposal were to: 1) Support students and their families in coping with the disruptions of COVID19; 2) Support the work of our partners in Bailen and Manila in the delivery of their services which may be hampered by the COVID19 disruptions; and 3) Use available, acceptable and accessible technologies in the absence of actual deployment of students to the Municipality of Bailen and Manila through blended learning. Funds were allocated to finance the development of learning materials and expand internet access in the communities. Though these funds were theoretically sufficient for the above purposes, it was not utilized due to time constraints needed to prepare the villages, implement the course and the release of funds prior to these.

Implementation of alternative learning activities

Most of the activities were implemented as planned. Initially, there were no COVID19 cases in Bailen. However, when the first case occurred, the municipality became preoccupied with its response. Stay-at-home protocols were also placed which made the BHWs (many are older people) unable to attend the online meetings. With the limited internet access in the barangays, the plan was to hold activities in the rural health unit where it was better and health personnel were expected to report periodically. The plan of setting up some sort of telehealth service did not push through due to logistic and human resource limitations. Other personal and organizational concerns of key stakeholders arose which extended the implementation of the course for another two weeks. The webinars were opened to the public instead of just the partner municipalities in Cavite to maximize reach. These were on critical public health action areas in the COVID19 response, managing COVID19 in the university setting, and LGU and Health Sector Partnerships to address COVID19. For the capacity-building and supervision activities, the target participants were shifted from the BHWs to community health volunteers in a church-based organization mainly due to availability issues. The family health nursing and research activities went through as planned.

Issues, challenges and opportunities

Policies influential to the online shift

Potential influencers include awareness, perception and engagement, policy and its context (Regmi& Jones, 2020). At the initial months of the pandemic, the usual policies governing nursing edu-

cation from the government regulating agencies remained in effect. This included the required number of clinical hours for graduation and to be able to sit in the board exams. At the college level, the UPCN competency-based BSN curriculum was the basis for the course implementation. In March 2020, there was no policy yet from the regulating agencies on how to shift the clinical exposure to an online learning environment and if there are modifications in the required clinical hours. These came only later in the year, so the faculty had to devise ways for alternative learning activities. There was also some degree of pressure as the students were expected to graduate by the end of the term. The university later instituted a no-fail policy.

Access and availability of technology

Institutional barriers or enablers include organizational goal, culture, technology, context and setting (Regmi & Jones, 2020). As the premier state university of the country, the University of the Philippines aims to produce highly-motivated and competent nurses. Its core values of integrity, nationalism, caring, excellence and love for nursing is integrated in its curriculum. The existence of online learning platforms such as UP Manila Virtual Learning Environment (VLE) were instrumental during the shift. However, barriers in terms of technology existed both from the students and the community. From the students, there were those who had limited internet access or available computer devices. The same thing was found with our community partners. Many of them are not familiar with using Zoom as a mode of communication. Though telehealth was considered to be one of the modes of delivering services, the infrastructure for such is not yet available in the partner communities. To be able to overcome those barriers, the students were allowed to communicate with their clients using any other online platform that is available and convenient for them to use. Virtual meetings were facilitated using the devices of the community organizers who are more knowledgeable in setting up those applications. Activities were carefully-planned to keep internet use to a minimum. The assignment of a student to a group took into account those with limited access to the internet and computer.

Many health records and documents pertaining to health programs are still printed and mechanisms for ensuring the online transmission while maintaining data privacy are still limited. Despite funds from the university approved to support the shift to online, access takes a considerable amount of time. Instead, the available resources (from UPCN, UP-CHDP, faculty and students) at that time were utilized.

Motivation for Learning

Learners-facilitators barriers or enablers include demands, motivation, digital literacy, access and resources (Regmi & Jones, 2020). The students were very much eager to graduate by the end of the semester. However, many reported disruptions in their way of life and that they were busy in coping with these. Some students reported feelings of anxiety and stress from the course requirements as well as uncertainty for their family's safety during the pandemic. Still others were concerned about their financial stability with many industries closed down. There were calls from university students to end the semester and give a universal pass. These did not materialize given the policies governing nursing education in the Philippines.

Delivery mechanisms

Delivery mechanisms include curriculum content, pedagogy, methods, and approaches (Regmi & Jones, 2020). As the expected competencies remained the same, the main challenge of the faculty was to identify alternative learning activities that best enable the students to demonstrate these. The mechanisms for faculty supervision was also an area that needed strengthening. Though it is expected that the students have performed the face-to-face activities in the earlier courses, they still need some degree of supervision for adequate feedback. Both faculty and students were used to the immediate feedback through a face-to-face interaction, hence there was a learning curve to get used to doing things online. At the very least, the students participated in at least once a week monitorial meetings. Students were also encouraged to communicate with their faculty in-charge whenever necessary. This was not just limited to ensuring coordination on activities with community partners, but as well as to check on their general well-being. It was also a challenge for the faculty since the situation during that time was very uncertain and both faculty and students experienced a lot of stress and anxiety brought about by the pandemic. Considerations were given for students whose families were directly affected by COVID19.

Potential outcomes

Potential outcomes include better understanding, motivation, independent learning and performance (Regmi & Jones, 2020). All students passed the course and demonstrated at least the minimum required competencies. Though their motivation to finish the course was challenged, coping with their own COVID19 disruptions, they were able to submit all the requirements. As the nature of the course (as an integration and terminal course) has always been towards independent learning, this expectation remained the same. However, as the shift to online was prepared and implemented in a short period of time while everyone was coping with the pandemic, there was a feeling of exhaustion from the faculty and students. Due to the abrupt ending of the semester, a formal course evaluation with the students was not carried out.

Potential impact

Potential impact includes engagement, promoting learning, developing sense of community, significant changes in instructional design, delivery and management (Regmi & Jones, 2020). The experience of faculty, students, and community partners were very insightful in developing future community health nursing courses. More technologies such as Zoom subscriptions for faculty and students, CANVAS as a learning management system, and financial subsidy for internet access were made available.

Discussion

Several aspects of the experience of the UP College of Nursing in shifting its intensive community health nursing course online is similar to those reported in literature (Neupane, Sharma, & Joshi, 2020; Ramos-Morcillo et al., 2020; Regmi& Jones, 2020). As the disruptions of the COVID19 Pandemic in the Philippines may protract in the incoming months and years, the modifications of the teaching and learning activities in nursing courses will continue. Policies,

institutional mechanisms, learner and educator factors, curriculum implementation and its potential outcomes and impacts remain to be key areas to develop highly-motivated and competent nurses (Fogg et al., 2020; Regmi& Jones, 2020).

Policies from the national regulating agencies such as the Commission on Higher Education and the Philippine Board of Nursing are important to provide the strategic directions as far as the nursing education response to the pandemic (CHED, 2020). The Association of Deans of the Philippine College of Nursing has spearheaded conversations on best practices that will guide nurse educators in the shift to online learning (ADPCN, 2021). From the experience of the UP College of Nursing, it was essential to revisit the expected course competencies, the learning activities, resources needed and the methods of evaluating student performance. University policies were also important contextual considerations. This may include allowing face-to-face classes, the duration of the semester, adjusting the academic calendar, setting up graduation dates, and academic policies (i.e. no fail policy). Considerations regarding policies at the local government unit level include whether student placements can be allowed with minimum disruptions to other aspects of their COVID19 response.

Setting up expectations with the students and community partners are essential for the achievement of learning outcomes. Similar to the experiences of other colleges of nursing, communication, coordination, and collaboration are essential components in setting up the learning environment (Mariani, Havens, & Metz, 2020). Flexibility in the learning activities was essential as students, faculty, community partners and their families are coping with COVID19. From our experience, it is not just the faculty and welfare of the students that need to be addressed but mostly the communities that we are serving. Revisions midway had to be done due to unforeseen circumstances and the unpredictability of COVID19 cases and the response of the community as a whole. Expectations need to be leveled that these activities are not just course requirements, but to deliver interventions with the communities in the spirit of partnership and collaboration.

Availability and access to the internet has been a problem in the Philippines (Salac& Kim, 2016). The current initiative of the university to provide internet subsidy to faculty and students may contribute to an array of needed things to do. Investments to video conferencing applications and learning management systems support the implementation of teaching-learning activities. As for the community partners, establishing a telehealth service may require careful thought as it requires funds. Notwithstanding that the delivery of health care services has in part, shifted also online. Presence of community organizers who coordinated university programs and activities of students with partner communities has been very helpful in ensuring constant communication and updates.

The faculty being digitally-literate was helpful in implementing the course. In such cases wherein the faculty are otherwise, capacity-building activities may be important. It may also take some time for some faculty to accept the shift to online has many have been used to the face-to-face classes for years, or even decades. From our experience, there was a long conversation on whether these alternative learning activities were sufficient substitutes for what we are used to.

Conclusion

Activities related to community health program management, participatory research, capacity-building and supervision, and family health nursing have been conducted fully online. However, revisions are still necessary to ensure leveled expectations, flexibility of plans, and mechanisms for supervision of students within the greater context of national, local government unit, and university policies.

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Stress Relief, Living Arrangements, and Depression Among Community-Dwelling Older Adults in the Philippines

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Abstract

The Philippines is transitioning into an aging population. This results in problems associated with the mental health of older people. However, despite studies of depression in later life, there has been limited literature on the experience of those from rural communities in low and middle-income countries. This study examines depression, stress and stress relief measures used, and living arrangements of older adults (≥ 60 years) living in rural areas in the Philippines and compares depressed older adults from those that are not depressed. A cross-sectional descriptive design was employed using interviewer-assisted surveys. Convenience sampling was conducted to obtain data from 410 older people seeking care at rural health clinics across the Philippines. Data were analyzed through frequencies and chi-squares. Those who were depressed accounted for 11.5% of the respondents, while 77.1% reported some level of stress. Their stress relief measures included eating regularly (82.9%), exercise (64.6%), praying (62%), hanging out with friends and family (22%), and getting massages (7.3%). Around a third of respondents lived alone. For overall life stress, those who were not depressed reported that their lives were somewhat stressful, significantly higher than their depressed counterparts. Respondents who answered that work and money were their causes of stress showed significant differences compared to those who experienced no work or money-related stress. For stress

relief measures, those who performed exercise and identified hanging out with friends and family as measures to maintain good wellbeing were significantly less likely to report depression. There were no differences among those living alone or older adults living with either adults, children, or both. Depression is an area of concern for community-dwelling older people in rural municipalities. The results of our study suggest the need to develop primary care services such as depression screening, health education and promoting healthy lifestyles, spirituality, stress management, and creating activities that will promote social interaction and maintain a social network.
Keywords: older adults, stress, depression

Introduction

The Philippines is transitioning into an aging population. As of the latest census in 2015, 7.5 million Filipino older adults account for 7.5% of the total population (Philippine Statistics Authority, 2015). This results in problems associated with the mental health of older people. The nation comes in third in the countries with the most problems in mental health in the Western Pacific Region, with an estimated six million Filipinos who suffer from depression and/or anxiety (World Health Organization, 2017). There are 17% to 20% of adult Filipinos live with mental disorders (Department of Health, 2012), and high prevalence of suicide among older adult Filipinos due to their failure to adapt to rapid social and economic developments (Carandang et al., 2019).

Mental health issues are presently more prevalent in low-middle-income countries (LMICs) than their counterparts because of scarcity in resources and health care access (Rathod et al., 2017). About 80% or more people who are experiencing depression are living in the LMICs (Vigo et al., 2016). Recent studies suggest that depression is associated with older age (Flores et al., 2018). However, there is little known on late-life depression of older Filipinos, especially when associated with stress, stress relief, and living arrangements. Living alone when someone gets old is unconventional in the Philippines. It is a Filipino norm for parents to live in the households of their children, especially when they get older (Chen et al., 2017; Natividad & Cruz, 1997)

Our study aims to contribute to the research gaps that can be useful in formulating or revising national policies and interventions addressing depression among older adults. This study describes the prevalence of depression, stress and stress relief measures used, and living arrangements of older adults (≥ 60 years) living in rural areas in the Philippines and compares depressed older adults from those that are not depressed.

Method

A cross-sectional descriptive design was employed primarily using interviewer-assisted surveys. Convenience sampling was conducted to obtain data from 410 older people (aged 60 years old and above) who sought care at their village health center in rural areas across the Philippines. Those who gave verbal consent (the need for written informed consent was waived) completed individual face-to-face interviews to measure depression, stress, stress relief, and living arrangements. A detailed description related to the parent study is described elsewhere (Cacciata et al., 2021). The study was reviewed and approved by the Institutional Review Board at the University of California Irvine and the Research Ethics Board at the University of the Philippines Manila.

Measures

Depression was measured with seven items from the Hospital Anxiety and Depression Scale (HADS). Scores were categorized into normal, borderline, and depressed. For stress, the participants were asked with a single item on "how stressful is your life?" with possible responses ranging from not stressful, somewhat stressful, to very stressful. For sources of stress, the participants were asked a yes or no question if their source of stress is work, caring for family, and money. Living arrangement was measured with a question on whether the respondent lived alone or not. Finally, stress relief measures were asked with yes or no items on whether the respondents exercise, eat, get massages, pray/see a priest, and regularly hang out with family and friends to maintain health and wellbeing.

The demographic variables were collected using a standardized form. Age was measured as age at the last birthday. Marital status was categorized as single, married, widowed, and separated. Educational level was categorized as an elementary undergraduate, elementary graduate, high school undergraduate, high school graduate, college level, college graduate, and postgraduate degree.

Data Analysis

Data were summarized using descriptive analysis and differences in the categories of the HADS depression scale. A chi-square test was used to assess the association between the three categories of the HADS depression scale and the sociodemographic and economic characteristics, living arrangement causes of stress, and stress relief measures. Data analysis was performed using SPSS (Version 26). Statistical significance was set at a P value less than 0.05.

Results

Sociodemographic and economic characteristics

Table 1 reports the outcome variable depression according to sociodemographic and economic characteristics of older adults. Four hundred forty-five older adults were included in the survey. After excluding cases with missing data (n= 35; 7.9%), the final data set in the analysis was from 410 older adults. Nearly 12% of older adults were categorized with depression, with 10.5% at borderline. Older adults aged 60-69 years were significantly more depressed (83.3%) as compared to those belonging in the 80 years or above group (42.1%), a P-value = <0.001. Marital status did not report a significant difference among single, married, and divorced/widowed, like those living alone or older adults living with either adults, children, or both. Those who reported having an income of less than PHP 25,000 annually were significantly more depressed than those with higher annual incomes. The association between stress and depression was significant ($p < 0.00$). Respondents who answered that work ($P = 0.03$) and money ($P = 0.01$) were their causes of stress showed significant differences compared to those who experienced no work or money-related stress. Those who performed exercise and hung out with friends and family were significantly less likely to report depression ($P = < 0.001$ and 0.02, respectively).

Table 1.
Depression scale according to characteristics and stress relief measures of older adults (N = 410)

		Depression scale						
		Depressed		Borderline		Normal		
Variables	**%**	**n**	**%**	**n**	**%**	**n**	**%**	***P***
Overall		47	11.5	43	10.5	320	78.0	
Age (years)								<0.001
60 – 69	61.5	20	83.3	22	8.7	210	7.9	
70 – 79	29.3	11	9.2	13	10.8	96	80.0	
80 or above	9.3	16	42.1	8	21.1	14	36.8	
Sex								0.97
Male	35.6	16	11.0	15	10.3	115	78.8	
Female	64.4	31	11.7	28	10.6	205	77.7	
Marital status								0.46[c]
Single	7.1	5	17.2	4	13.8	20	69.0	
Married	53.2	21	9.6	25	11.5	172	78.9	
Widowed/Divorced	39.8	21	12.9	14	8.6	128	78.5	
Education								0.40
HS[a] undergraduate	48.8	27	13.5	19	9.5	154	77.0	
HS[a] graduate or higher	51.2	20	9.5	24	11.4	166	79.0	
Income (PHP[b] per year)								0.03
< 25,000	18.0	15	20.3	9	12.2	50	67.6	
25,000 – 50,000	38.3	15	9.6	19	12.1	123	78.3	
50,001 – 75.000	18.5	7	9.2	11	14.5	58	76.3	
> 75,000	25.1	10	9.7	4	3.9	89	86.4	
Living alone								0.33
No	31.5	17	13.2	17	13.2	95	73.6	
Yes	68.5	30	10.7	26	9.3	225	80.1	
Life stress								< .001
Not stressful	22.9	1	0.2	10	2.4	83	20.2	
Somewhat stressful	72.2	38	9.3	31	7.6	227	55.4	
Very stressful	4.9	8	2.0	2	0.5	10	2.4	
Cause of stress (work)								0.03
No	85.9	44	12.5	32	9.1	276	78.4	
Yes	14.1	3	5.2	11	19.0	44	75.9	
Cause of stress (family)								0.45
No	72.0	31	10.5	29	9.8	235	79.7	
Yes	28.0	16	13.9	14	12.2	85	73.9	
Cause of stress (money)								0.01
No	33.9	7	5.0	17	12.2	115	82.7	
Yes	66.1	40	14.8	26	9.6	205	75.6	
Stress relief – exercise								<0.001
No	35.4	31	21.4	18	12.4	96	66.2	
Yes	64.6	16	6.0	25	9.4	224	84.5	
Stress relief – eat								0.08
No	17.1	10	14.3	12	17.1	48	68.6	
Yes	82.9	37	10.9	31	9.1	272	80.0	
Stress relief – massage								0.29[c]
No	92.7	46	12.1	41	10.8	293	77.1	
Yes	7.3	1	3.3	2	6.7	27	90.0	
Stress relief – pray								0.07
No	38.0	14	9.0	11	7.1	131	84.0	
Yes	62.0	33	13.0	32	12.6	189	74.4	
Stress relief – friends								0.02
No	77.1	44	13.9	33	10.4	239	75.6	
Yes	22.9	3	3.2	10	10.6	81	86.2	

[a]*HS* High School
[b]*PHP* Philippine Peso
[c] Fisher's Exact Test

Discussion

Depression and stress

Our results suggest that those who were not depressed experienced more stress than their counterparts who were either depressed or borderline. Older adults who were not depressed are vulnerable to depression once a major stressful life event occurs. These may include a death of a significant other, death of a close family member, financial difficulties, and health deterioration (Bellingtier et al., 2017). The association between depression and stress has been reported by many studies (Hammen, 2018; Monroe et al., 2019). However, there may be other factors that contribute to this relationship.

Furthermore, associations were found between depression and work and money as sources of stress. Older people in rural communities continue to engage in income-generating activities, especially in the agricultural areas. Stress from financial difficulties may result from the instability of income from agricultural yield and the absence of other sources of funds (i.e., pension).

Depression and living arrangements

Multiple studies suggest that those who live alone are most likely to report depression (Dean et al., 1992; Hu et al., 2012; Stahl et al., 2017) and a higher risk of early mortality (Holt-Lunstad et al., 2015) as compared to those who live with a significant other or family member. In addition, living alone poses a greater risk for social isolation because of a considerable lack of emotional support, increasing the risk of depression (Cacioppo & Hawkley, 2003). Despite these facts, our findings revealed that living arrangement was not associated with depression. Other factors present in rural communities may contribute to this. For example, community cohesion is very strong in rural areas, which stems from the need to help each other, trust, and closely-knit relationships (Skerratt et al., 2012). Living in a cohesive community also entails a good neighborhood. The neighborhood social quality modifies the association between living alone and depressed (Stahl et al., 2017). This can be attributed to enhancing supportive behaviors among neighbors, including assistance with household chores and transportation (Cramm et al., 2015), and may lessen the stresses of living alone (Robinette et al., 2013). Furthermore, a good neighborhood promotes community social activities for older adults, giving them the chance to meet other people and create and increase their social network (Elliott et al., 2014).

Depression and stress relief measures

The results of our study supported the results of previous studies that maintaining a healthy lifestyle reduces depression symptoms (Lucineide, 2019). Such health behaviors include exercise, eating a balanced diet, maintaining adequate social support, and spirituality. In addition, rural areas provide a conducive environment for physical activity due to more green spaces and walkable spaces (Stahl et al., 2017). The quality of food may also be healthier considering the preponderance of agricultural products over fast food. In addition, senior Filipino women who reported positive self-rated health and had higher psychological resilience and social interaction depicted a lower level of depressive symptoms (Carandang et al., 2019).

On the other hand, a higher level of depressive symptoms was noted in women with chronic diseases. As mentioned earlier, the culture in rural areas is characterized by closely-knitted relationships. People tend to know each other more in the provinces compared to the urban areas. Social support as a stress relief measure is consistent with a study conducted in Taiwan among older adults (Zimmer & Chen, 2012). The study showed that social support was a strong predictor of depression among those not depressed at baseline but have lesser change among those already in such condition. Less depressive symptoms among the community-dwelling older adults in Asia are associated with adequate general social support such as being with a spouse or partner, living with family, having a large social network, having more contact with family and friends, and having emotional and instrumental support (Tengku et al., 2019). Furthermore, our study suggests the role of praying and visiting a priest as a stress relief measure.

The Philippines is a predominantly Catholic country, is characterized by the strong influence of the church in daily life. In addition, older people are known to participate in many religious activities.

Recommendations

Development of primary care interventions for depressed older adults in rural settings

The results of this study suggest the need to develop interventions to address depression among older adults. This is particularly challenging within the Philippine context as primary care services are specific to the geriatric population, and mental health services are limited in rural settings. Moreover, mental health services may not be routinely delivered due to competing priorities with maternal and child health programs, tuberculosis control, and other conditions such as heart disease, lung disease, and diabetes. Nonetheless, service packages that include a routine assessment of mental health problems, referrals to a psychiatrist, psychosocial and healthy lifestyle interventions may be warranted. In addition, other activities in the communities that promote mental health may include strengthening the local senior citizens association as a venue of socialization and maintaining social support.

Strengthen policies such as the Philippine Plan of Action for Older Persons

Depression among older adults remains a public health issue that leads to impaired functioning in daily life. Unfortunately, depression is underdiagnosed, and the plan of care receives little attention in primary care settings, which necessitates evidence-based interventions and health promotion programs to be developed to avoid overlooking symptoms that leave depression untreated among older adults. The results of this study can serve as evidence for policy recommendations on the advancement of health and wellbeing in the older age, development of supportive environments and can also focus on improving mental health and instituting systems that support the needs of older adults. Mental health care in the community consists of training health workers with issues related to aging and implementing long-term care of older adults diagnosed with depression, emphasizing education, training, and support to the caregivers. It is also important to ensure that mental health services be made available to the community and residential care centers. The National Health Insurance Programs must include

care packages for mental health services to promote the accessibility of health care that is responsive to the needs of older adults.

Limitations

The responses of the older adults on their mental health may be affected by stigma and the culture of keeping to oneself when adversities in life are experienced. As a result, there may be a predilection to report more positive health behaviors, including their stress relief measures.

Conclusion

Depression is an area of concern for community-dwelling older people in rural municipalities. The results of our study suggest the need to develop primary care services such as depression screening, health education and promoting healthy lifestyles, spirituality, stress management, and creating activities that will promote social interaction and maintain social networks.

Declaration of conflicting interests

The authors declare that there is no conflict of interest.

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Stressful Impact of Covid-19 among College Students in 2020

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Abstract

The COVID-19 pandemic has introduced and exacerbated stresses of college and university students, which is a population already known to manage unique stresses. The Perceived Stress Scale was used to collect data via an online survey of a diverse group of students in the United States to identify stressors, levels of stress as compared to life before the COVID-19 pandemic and perceived ability to cope. Consistent with our hypothesis, analysis of the data revealed that social and health factors did impact perceived ability to manage increased stress caused by the COVID-19 pandemic.

Introduction

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pandemic of 2020 directly impacted the delivery of education. This global COVID-19 pandemic precipitated the sudden closures of schools and colleges in the United States in March of 2020. Consequently, as in-person instruction was no longer permitted, school administrators and faculty were tasked with readapting the curriculum to an online format. Many college and university students were also forced out of their dormitories and sent home because of lockdowns (CDC, 2020). With their lives in flux, students, administrators, and faculty faced a novel teaching and learning paradigm: work from home (WFH). Students nationwide were forced to adjust to the sudden change from face-to-face classes to remote learning (Gould, 2020). This flux could potentially be linked to increased stress in students' experiences (CDC, 2020; Gould, 2020).

Background of the Study

Stress in College and University Students:

Managing stress is very difficult and is a life challenge with which most individuals must cope (Maykrantz &Houghton, 2020). Due to COVID-19, college and university students in the United States experienced a heightened sense of stress in 2020 (Maykrantz &Houghton, 2020). This increased stress could potentially lead to serious mental health conditions (Maykrantz &Houghton, 2020). Roming and Howard (2019) defined stress as "a condition for which individuals label life situations as taxing or exceeding personal resources." Using this definition, it is no surprise that a global pandemic has the potential to cause increased stress in college students. Stress is also defined by an individual's response to an environmental experience that overwhelms their perceived capacity to cope effectively, including those indicated by physiological and psychological symptoms (Cohen et al., 1983).

Individual responses to stress may lead to changes in coping behaviors such as smoking, drinking, use of substances, eating, and exercise (Crosswell & Lockwood, 2020; Dalky &Gharaibeh, 2019; Saleh et al., 2017; Wayment &Cavolo, 2019). Maykrantz and Houghton (2020) detailed that stress can contribute to weight gain, sleep disturbances, drug and alcohol use, and smoking. In addition, according to Saleh et al. (2017), students' mental health is exhibited in multiple ways including anxiety, stress, difficulty sleeping, and depressed moods. Dalky and Gharaibeh (2019) noted other factors that contribute to increased levels of stress among college and university students; these include financial concerns, competition amongst classmates, over work from schoolwork, and anxiety about what the future holds. Tomy et al. (2019) also found factors related to time management, including long hours of

study and insufficient time to complete their assignments, to be important factors contributing to the amount of stress experienced by college and university students. According to Kring (2018), college and university students also face challenges with maintaining proper self-care. They found that sleep deprivation was a major factor in students' "inability to concentrate."

In addition to the usual stressors, beginning in 2020, college students had to contend with the stressors that came with the pandemic. Creating work life balance is more challenging when working from home, and many activities that could decrease stress were no longer permitted due to COVID-19 restrictions. Home for some students may not be a conducive place to work; some students lack a dedicated study place and may find themselves more distracted at home than they were on campus. Beyond closures of places of interest like gyms and restaurants, another important consequence of the pandemic to keep in mind is the actual disease. Additional stressors included contracting the virus, seeing friends and family get sick, or living in fear of infecting immunocompromised family members (Son et al., 2020).

Colleges often work to devise programs that can aid students in decreasing stress by helping them improve their diet, exercise, and sleep, but more must be done in response to the pandemic (Wayment &Cavolo, 2019). In the wake of the unprecedented COVID-19 pandemic, administrators, faculty, and staff at colleges should be working to decrease the stress impacting students, but there is limited research on how college and university students have dealt with stress during COVID-19 pandemic.

Self-reported perceived stress levels are used to compare the level of perceived stress related to recent events. Higher scores of self-reported perceived stresses are associated with increased risk of psychiatric illness (Cohen & Williamson, 1988). The Perceived Stress Scale-10 (PSS-10) has been shown to be a valid measure of stress levels among college students. The PSS-10 was employed in this study to gauge stress levels in college students.

Purpose

The purpose of this study is to determine stress levels in college and university students in the United States during the COVID-19 pandemic of 2020. The information gained from this study may help administrators, faculty, and mental health professionals to better understand the ways in which the COVID-19 pandemic is affecting students in the United States and may help academic administrators devise innovative strategies to help decrease the stress that college and university students experience.

Hypothesis

Ho1: College and university students will report higher stress levels during the COVID-19 pandemic.

Ho2: College and university students who are exposed to higher levels of perceived stress due to the COVID-19 pandemic will display a set of negative health behaviors.

Methods

Recruitment Procedures and Ethical Considerations

After obtaining IRB approval from Nova Southeastern University, flyers containing information about the one-time anonymous survey were shared with multiple administrators across 200 schools. Administrators, in turn, shared the survey flyers on school switchboards, in student emails, and via private social media accounts. Participants also were encouraged to share the flyers with their friends on social media. To maintain the anonymity of the participants, the survey did not specify the name or school details of the participants. Researchers received responses to the one-time anonymous survey from August through November of 2020, from 47 states and Puerto Rico (No participants indicated that they were from Arkansas, South Dakota, or Iowa).

Participants were given a link to access the study and were provided with informed consent forms which allowed the researchers to use the non-identifiable data collected for analysis, dissemination, and publication of research findings. Table 3 illustrates the demographic distribution of the convenience sample of 4062 students. Participants from diverse ages ranging from 18 to 40+ (separated into ranges 18-22, 23-29, 30-39, and 40+), races, ethnicities, and genders were recruited in the United States to participate in this study from mid-July to mid-October of 2020, during the COVID-19 pandemic. The participants included students in undergraduate and graduate programs from 47 U.S. states and Puerto Rico that were enrolled in college during the COVID-19 pandemic.

Data was collected using the Perceived Stress Scale and non-identifiable demographic questionnaire/demographic forms. The Perceived Stress Scale (PSS-14), originally developed by Cohen et al. (1983), has been used to evaluate the level of stress in an individual's life in a one-month period. This scale has been used widely in multiple studies and has been found to be reliable in diverse settings and in different languages. In this study the shorter version of the Perceived Stress Scale (PSS-4), adapted from Cohen et al. (1983), was used to determine the stress levels of college and university students during the COVID-19 pandemic. Likewise, Warttig et al. (2013) found the PSS-4 to have an internal consistency of 0.77 (Cronbach's alpha = 0.77). The inclusion criteria for the study were: self-identify as a college student, age 18 years or older, currently residing in the United States, and enrolled during the academic year 2019-2020. College and university students living in the United States who met the inclusion criteria were informed about the following: a) the purpose of the study, b) the time commitment (10-20 minutes in total), c) their role as participants, and d) their voluntary participation and right to withdraw at any time. If a participant did not meet the above criteria they were excluded from the study. After reading the informed consent the participants consented by starting the anonymous survey.

Data Analysis

This study was designed to explore factors associated with college and university students' behavioral responses to the COVID-19 pandemic in the United States a few months after mandatory shutdowns in many states and cities in the US. Protective and risk factors to stress were screened based on a priori knowledge of stress response in young adults and adults, and behavioral responses to the COVID-19 pandemic in selected students throughout the United States were examined. Additionally, the study aimed to determine the relationship between perceived stress scale (PSS) score, behavioral responses to the COVID-19 pandemic, previous mental health diag-

nosis, sleep habit change, substance use, and other behaviors that have been evidenced to impact wellness. Furthermore, the study aimed to examine any predictor abilities of the selected variables to PSS score. The research study was based on a quantitative design from which descriptive and inferential analyses were conducted. Maptive (Figure 1.) was utilized to map the geolocation of the respondents by the respondents' provided zip codes. SPSS version 26 and SAS version 9.4 were used to create descriptive statistics and run the logistic regression models to determine the presence of the effect of stress on the outcome variables of interest while adjusting for the demographic characteristics of the study subjects. List wise deletion was used in our models, since the proportion of missing in the variables of interest was less than 10%, which the literature suggests that does not affect the results (Bennett, 2001).

Sampling Strategy

Upon receiving IRB approval from Nova Southeastern University, students throughout the United States were invited to complete an online survey questionnaire developed by the researchers with the PSS-4 questions. There were 4062 students recruited to participate from 47 states throughout the US and Puerto Rico (see fig.1). Of those, 3273 consented and took the survey and 3214 respondents met all criteria for inclusion in the study and responded to the survey based on their enrollment status at a university or college within the US. Students who did not answer three or more questions were excluded from the analysis, yielding N=3214 of student respondents included in the analyses.

To address the first research hypothesis, which aims to assess if college and university students' would report higher stress levels during the COVID-19 pandemic, a subset of questions assessing cognitive appraisals of events during the pandemic were asked of the respondents. The same sample was used to address the second hypothesis, aiming to find out if students who were exposed to higher levels of perceived stress due to the COVID-19 pandemic will display a set of negative health behaviors.

Results

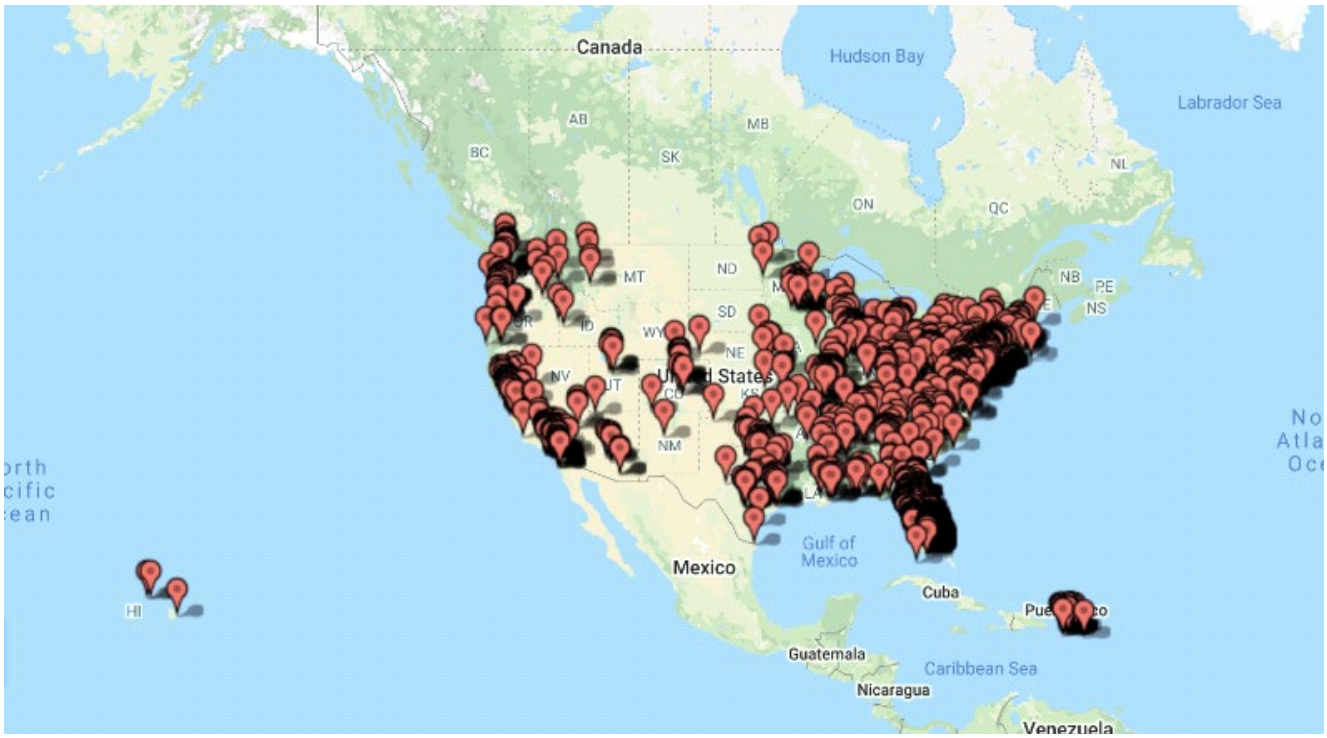
The data was analyzed using SPSS version 26 and SAS. Table 3 depicts the total number of participants sampled were 3214, out of which 80.2% (2577) were females and 19.6% (630) were males. The majority of the participants—51.4% (1652) —were from age group 18-22 years old, 30.5% (979) were between ages 23-29 years, 10.6% (314) were aged 30-39 years, and 7.5% (242) were more than 40 years old. Approximately 67% (2036) participants were White, 14.5% (442) were African American, and 18.7% (569) reported their race as other while 167 did not report their race.

The majority of the participants (91%) reported negative testing for COVID-19 while 4% reported positive status and 4.8% reported unknown status. Eighty one percent of the participants were single, followed by 12% married, 5% cohabitating, and 1.7% divorced. Varied responses were observed for sexual orientation; 83.4% of participants reported being heterosexual and 8.2% bisexual, while the others identified as gay, lesbian, and pansexual.

All the participants reported being enrolled in college or university in 2020. Approximately half of the students (46.4%) were undergraduates, out of which 26.2% were Freshmen, 22.1% were Sophomores, 27.8% Juniors, and 24% Seniors. Seven percent of the participants were graduating in 2020, 30% were graduating in 2021, and 24.3% were graduating in 2022.

Most of the participants were US citizens (96%), while only 3.8% were international students. Similarly, the majority of participants (82%) reported their na-

Figure 1. Students' Geographic Location



tionality as USA/Canada, followed by 4.4% from European countries and 5.6% from non-European countries. There were participants from Indian subcontinent, Asia, and Africa at 1.6, 2.0%, and 1.0%, respectively. Sixty-seven percent of participants were not first-generation college and university students, while 33% were first generation in college. A similar pattern was observed with immigration status; most of the participants (87%) were not first-generation immigrants to the US. Thirty-five percent of the participants reported their family income between $50,000 and $100,000, while 28.5% reported their annual income less than $50,000, and 18% reported their income their income between $100,000 to $150,000.

Less than half of the participants (36%) reported no concern about securing employment during the COVID-19 pandemic and the rest (64%) reported being concerned about their employment during or after the pandemic. Table 1 shows the alcohol, sleeping, eating, exercising, and vaping/smoking frequencies. Forty-seven percent (1508) reported no consumption of alcohol, followed by 22.6% (724) who stated no change in their alcohol consumption, 19.4% (621) who stated that their alcohol consumption had increased due to the pandemic, and 11.1% (355) who reported decreased alcohol consumption since the pandemic. Approximately 28% reported consuming alcohol at least once a week, 17.7% reported consuming alcohol 2-3 times per week, and 49.3% reported no consumption of alcohol at all.

Information for the Sum of PSS is depicted in Table 2. The results of fitted models having the same set of predictors (SUM PSS, age, sex, race) and different outcome variables of interests (alcohol, change in sleeping, eating habits and exercising) are listed in Table 4, which includes the adjusted coefficients and odds ratios for the effect of stress on each of the outcome variables are displayed.

PSS has a significant effect on Alcohol Consumption, Sleeping, Eating, and Exercising behaviors. In regard to alcohol, the students who did not report being pre-pandemic alcohol drinkers were excluded from the analysis. Among the students who reported being alcohol drinkers, the following was exhibited. The odds that a student increased alcohol consumption vs. no change grew by

Table 1. Alcohol, Sleeping, Eating, Exercising, and Vaping/Smoking Frequencies

Alcohol	
Yes, it increased	621 (19.4)
No, it decreased	355 (11.1)
No, it stayed the same	724 (22.6)
I do not drink alcohol	1508 (47.0)
Sleeping	
No change	679 (21.1)
Yes, less sleep	1616 (50.3)
Yes, more sleep	919 (28.6)
Eating	
No change	807 (25.1)
Yes, less healthy	1827 (56.9)
Yes, more healthy	579 (18)
Exercising	
No change	691 (21.5)
Yes, less exercise	1749 (54.4)
Yes, more exercise	773 (24.1)
Vaping or smoking	
Yes, it increased	217 (6.8)
No, it decreased	53 (1.7)
No, it stayed the same	72 (2.2)
I do not smoke cigarettes or vape	2869 (89.4)

Table 2. Sum of Perceived Stress Scores

Variable	SUM of PSS ± SD	F value	P value
Alcohol			
Yes, it increased	9.8 ± 3.09		
No, it decreased	8.08 ± 3.07	22.13	<0.0001
No, it stayed the same	7.66 ± 3.30		
I do not drink alcohol	8.27 ± 3.31		
Sleeping			
No change	6.41 ± 3.29	201.38	<0.0001
Yes, less sleep	9.21 ± 2.98		
Yes, more sleep	7.99 ± 3.10		
Eating			
No change	6.95 ± 3.31	164.93	<0.0001
Yes, less healthy	9.13 ± 3.00		
Yes, more healthy	7.39 ± 3.20		
Exercising			
No change	7.41 ± 3.31	71.82	<0.0001
Yes, less exercise	8.88 ± 3.15		
Yes, more exercise	7.64 ± 3.19		
Smoking or vaping			
Yes, it increased	9.39 ± 3.29		
No, it decreased	8.40 ± 3.19	9.37	<0.0001
No, it stayed the same	8.35 ± 3.29		
I do not smoke cigarettes or vape	8.18 ± 3.26		

15% (CI 95% AOR [1.11, 1.19]) for each increase in SUM PSS by one unit; the odds of decreased alcohol consumption vs. no change grew by 5% (CI 95% AOR [1.01, 1.10]) for each increase in SUM PSS.

There is also a significant association between SUM PSS and Sleeping. More specifically, for each increase of SUM PSS, the odds that a student sleeps less increased by 33% (CI 95% AOR [1.29, 1.38]) compared to no change in sleep time. There is a 15% increase in the odds of sleeping more for one unit increase of SUM PSS (CI 95% AOR [1.11, 1.19]). When considering eating behavior, the odds that a student ate less healthy vs. no change in eating increased by 24% (CI 95% AOR [1.20, 1.28]) for each increase of SUM PSS by one unit. The odds of eating healthier vs. no change in eating increased by 4% (CI 95% AOR [1.00, 1.07]) with each increase in SUM PSS by one unit.

SUM PSS had a significant effect on exercising: the odds that a student exercised less vs. no change increased by 16% (CI 95% AOR [1.12, 1.19]) for each increase in SUM PSS by one unit. There was no significant effect on exercising more vs. no change.

There was also a significant effect on smoking or vaping. The odds of increased smoking or vaping vs. no change grew by 14% (CI 95% AOR [1.04, 1.25]) for each increase in SUM PSS by one unit. There was no significant effect of SUM PSS on decreased smoking or vaping.

Finally, SUM PSS had a significant effect on the students feeling that their grades were different from pre-pandemic. The odds of a student feeling they had higher grades increased by 5% (CI 95% AOR [1.01, 1.09]) as compared to no difference in grades for each increase in SUM PSS by one unit. In addition, the increase of SUM PSS by one unit was associated with a 27% increase in the odds of a student feeling they had lower grades vs. no difference in grades (CI 95% AOR [1.23, 1.30])

The COVID-19 pandemic was evidently a stressor for college and university students who are already at risk of exposure to several stressors impacting their wellbeing (Lopez-Madrigal et al., 2021). College and university students are exposed to different sources of stress but may use different psychosocial strategies to cope. Evidence from the literature suggests that having a type of support or coping strategy moderates and buffers the effects of stress on physiological measures while facilitating emotional recovery (Collins & Feeney, 2000; Winczewski et al., 2016; Kane et al., 2012; Jakubiak & Feeney, 2016).

Nonetheless, persistent stress can induce change in the brain and may affect executive functioning (Borodovitsyna et al., 2018), which in turn affects behavioral responses. Young adults are not assumed to have the ability to adapt to social, academic, and emotional stressors, especially if those stressors come in clusters as seen with the COVID-19 pandemic. Recently, there has been an increased interest in stress regulation and coping mechanisms among youth and young adults. According to Lopez-Madrigal et al. (2021), college and university students can highly benefit from resilience, positivity, self-regulation, and coping strategies as protective factors. In this study, the results suggest that students' perceived stress is significantly associated with involved negative health behaviors, which may be a response to the imposed stressful environment.

Discussion

Copeland et al., (2020) conducted a study to determine the impact of COVID-19 on the emotions, behavior, and wellness in 675 first-year college students in an ongoing study in Vermont. The researchers administered three assessments throughout the academic year: one to measure behavioral functioning, one for emotional functioning, and a one-item COVID-19 survey. The findings of the study revealed that COVID-related measurements were different from behaviors and wellness data in previous years. Our study, a one-time anonymous online survey, included more than two hundred colleges throughout the United States. A unique feature of the study is that it included both undergraduate students (26.2% were Freshmen, 22.1% were Sophomores, 27.8% Juniors, and 24% Seniors) and graduate students, which is more representative of the U.S. college student demographic than the study conducted by Copeland et al., (2020).

A study by Cohen, Hoyt, and Dull (2020) recruited 725 participants via Instagram to assess the perceived impact of COVID-19 on college students. The researchers used promotions to advertise

Table 3. Demographic Distribution

Demographic Characteristics	N=3214 (%)
Gender	
Female	2577 (80.2)
Male	630 (19.6)
Other	7 (0.2)
Age	
18-22 years	1652 (51.4)
23 – 29 years	979 (30.5)
30-39 years	341 (10.6)
≥ 40 years	242 (7.5)
Race	
White	2036 (66.8)
African American	442 (14.5)
Other	569 (18.7)
Missing	242 (7.5)
Undergraduate Student	
No	1490 (46.4)
Yes	1724 (53.6)
Class standing if Undergraduate	
First Year	444 (13.8)
Sophomore	375 (11.7)
Junior	472 (14.7)
Senior	406 (12.6)
Graduate Student	
Yes	1728 (53.8)
No	1483 (46.1)
Nationality	
USA/Canada	2629 (81.8)
European Country	123 (3.8)
Indian Subcontinent	51 (1.6)
Middle East/Turkey	53 (1.6)
Asia	64 (2.0)
Immigration Status	
US Citizen	3020 (94)
US Permanent Resident	89 (2.8)
Student Visa	92 (2.9)
First Generation College Student	
No	2153 (67)
Yes	1061 (33)
First Generation Immigrant	
No	2789 (86.8)
Yes	423 (13.2)
Yearly Family Income	
≤ $50,000	914 (28.4)
$51,000 - $100,000	1109 (34.5)
$101,000 - $150,000	587 (18.3)
$151,000 - $200,000	258 (8.0)
$201,000 - $300,000	154 (4.8)
≥ $301,000	187 (5.8)
Graduation Year	
2020	237 (7.4)
2021	951 (29.6)
2022	780 (24.3)
2023	593 (18.5)
2024	569 (17.7)
2025	51 (1.6)
Discipline of Study	
Humanities	141 (4.4)
Social Sciences	428 (13.3)
Natural Sciences	527 (16.4)
Formal Sciences	150 (4.7)
Professional and Applied	1120 (34.8)
Sciences	848 (26.4)
Other	

Table 4. Adjusted Odds Ratio of Alcohol, Sleeping, Eating, Exercising, Vaping/Smoking, and Grades

Variables	AOR	CI 95% AOR	P value
Alcohol			
Yes, it increased	1.15	(1.11, 1.19)	<0.0001
No, it decreased	1.05	(1.01, 1.10)	0.03
No, it stayed the same*			
Sleeping			
Yes, less sleep	1.33	(1.29, 1.38)	<0.0001
Yes, more sleep	1.15	(1.11, 1.19)	<0.0001
No change*			
Eating			
Yes, less healthy	1.24	(1.20, 1.28)	<0.0001
Yes, more healthy	1.04	(1.00, 1.07)	0.047
No change*			
Exercising			
Yes, less exercise	1.16	(1.12, 1.19)	<0.0001
Yes, more exercise	1.001	(0.97, 1.04)	0.93
No change*			
Smoking or vaping			
Yes, it increased	1.14	(1.04, 1.25)	0.003
No, it decreased	1.002	(0.89, 1.12)	0.96
No, it stayed the same*			
Grades different from pre-pandemic			
Yes, higher	1.05	(1.01, 1.09)	0.01
Yes, lower	1.27	(1.23, 1.30)	<0.0001
No difference*			

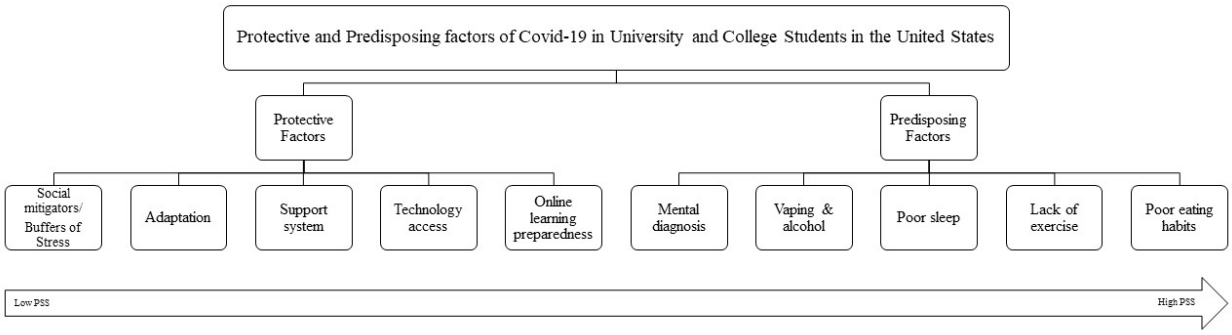
AOR = Adjusted Odds Ratio, * Category that serves as reference category.

the study and offered a $10 incentive for participation. Similarly to our study, the researchers used social media to recruit participants. Results supported the findings found in our research; particularly, the elevated level of stress associated with the COVID-19 pandemic, as well as concerns about their family's wellbeing, their education, and American society. Participants who received financial aid for college revealed greater levels of worry about the economic and emotional impact of COVID-19.

Consistent with our prediction, the data confirms our hypothesis that social factors and health factors impact perceived ability to manage stressors related to the COVID-19 pandemic. Increased levels of stress place individuals at higher risk for developing anxiety and depression (Carpenter et al. 2004). For example, Kumar et al. (2020) used an online questionnaire to study Indian college students' mental health as a result of the COVID-19 pandemic-caused lockdown. The study found that 86.3% of respondents were experiencing depression symptoms (21% reported severe symptoms of depression) and 74.3% of respondents reported moderate or severe levels of stress. The respondents in our survey reported a significant increase in their perceived inability to cope with the stressors associated with disruption in their academic routine. Relevant to this outcome is the suggested indication of strong correlations among the experienced stressors and the students' perceived stress. For instance, the results suggest that a strong relationship exists between perceived stress score and the odds of a change in eating habits and a change in smoking, as demonstrated by the statistically significant Adjusted Odds Ratio (AOR) in Table 3. Specifically, this study demonstrates that the selected health factors in this study are significantly affected by the respondents' perceived stress score. Perceived stress, as measured by the Perceived Stress Scale (PSS-4) appears to significantly influence sleep change, cigarette/vaping use, anxiety diagnosis, and alcohol use change. As such, it is possible to suggest that a priori risk factors increase susceptibility to experiencing changes in behaviors due to the stressors imposed by the COVID-19 pandemic (Table 3).

As predicted, previous social and health factors along with the COVID-19 stressors significantly increased risk for stress as indicated by the increased AOR. The current study indicates that overall, college and university students negatively appraised their ability to face stressors during the COVID-19 pandemic. This finding is consistent with previous studies pointing to rising levels of stress, increased isolation, and disruption of future plans during the pandemic in China (Zhai & Du, 2020). In addition, in line with the present study, Wang et al.(2020) con-

Figure 2. College Students COVID-19 Stress Model



Bivins B, Bivins L, Pierre-Paul CP, Jayson M, Rizvi Z, Cavanaugh G, Keko M, Singh A. 2021.

ducted an online survey in Guangzhou, China, and found that while the prevalence of depression and anxiety in college students was low (both below 15%), the prevalence of depression and anxiety were higher than in pre-pandemic times.

Our analysis indicates that age appears to play a role in buffering perceived ability to cope with stress, with younger respondents obtaining higher scores on the PSS scale. This implies that preventive health interventions need to take into account age as a factor that increases vulnerability to perception of stress. The results found many risk factors and social factors impacting sleep among college and university students during the pandemic, including previous diagnosis of anxiety and diagnosis of positive COVID-19 test result. In addition, sleep appeared to be mediated by age and by preparedness for remote learning during the pandemic. Having received a mental health diagnosis appeared to be a significant factor that affected students' appraisal of their capacity to cope with stressors during the pandemic. For example, those students with a previous diagnosis of anxiety reported difficulty with sleep.

For many of the students at the lower end of the PSS scores, the decrease in perceived stress appeared to have been mediated by negative health behaviors such as cigarette/vaping, eating, and alcohol use. A study by Jaffe et al. (2021), conducted at the onset of the COVID-19 pandemic in spring 2020, found that college student drinkers decreased alcohol use to 28% as compared to a decrease of 3% in Spring of 2018 and an 8% increase in the spring 2019. It is important to note that recruitment for the present study took place between July to October 2020, during the time the CDC lifted strict quarantine restrictions in most states and allowed individuals to visit beaches, restaurants, and other venues using the proper precautions to prevent the spread of COVID-19(CDC, 2020).

The data suggest that the COVID-19 pandemic had a negative impact on the health and social behaviors of college and university students, including impact on exercise, sleep habits, use of alcohol, and use of cigarettes/vaping. Age and preparedness regarding remote learning represented protective factors that mitigated perceived helplessness and stress during the disrupted academic routines. Participants exhibited negative coping skills such as drinking alcohol, cigarette smoking, or vaping in the early days of the pandemic.

There are many more underlying variables that contribute to the overall capacity for students to be able to control events in their lives and their perceived stress level during that time (Figure 2). For instance, other variables such as campus closures, disruption in academic routines, wellness programs, and other variables that were not studied here have been suggested to affect individual's ability to control life events. According to Zhai and Du (2020), campus closures as a result of COVID-19 have caused significant stress for college students. The move to remote learning took away a college campus' community support and peer interaction from students, which resulted in feelings of isolation and a disruption in academic routine. This disruption in academic routine can further be expanded by considering feelings of lost control due to having to abandon projects, such as internships or research projects, and delayed graduation times. Many of these abrupt decisions also left students who depended on campus jobs for employment feeling financially insecure and students who depended on campus counselors without resources. Protective factors studied by others included wellness programs and social support systems. Serafini et al. (2020) found psychological resilience and enhanced social support to be helpful in adaption to lifestyle changes, noting that hope and communication from healthcare authorities and scientists enhanced resilience in individuals. Copeland et al. (2021) studied the University of Vermont's Wellness Program and found that students enrolled in the program were less likely than students not enrolled in the program to be susceptible to internalizing symptoms due to COVID-19. The study additionally concluded that there was a slight advantage in resilience in students who were enrolled in the wellness program.

Recommendations:

COVID-19 has exacerbated the ordinary stress levels of college and university students, leading to increased negative behaviors and mental health issues. When students return to campuses in the fall of 2021, they will be coming back to school with more than a year's experience of living under quarantine, an experience that has impacted them all, albeit in different ways and different degrees of significance. While the move to remote learning was a positive or neutral change for some students, for many remote learning negatively impacted their learning, grades, motivation, mood, and behavior.

While it will be a relief for students to

return to campus and begin reacclimating to a new normal, college administrators will need to be cognizant of the impact of COVID-19 stressors on students. Many colleges offer free therapy to students, a valuable resource when utilized. The dissemination of information related to stress reduction and the availability of mental health resources may be a wise endeavor. Conley et al. (2017) conducted a meta-analysis to review mental health prevention programs for at-risk higher education students and found that there is empirical support for the usefulness of prevention programs on alcohol or tobacco use, sexual assault, eating disorders, and low academic achievement to minimize or alleviate mental health issues and to promote mental wellness in this population.

In order to heal from the damage that COVID-19 has caused to the mental health of students, college officials will need to be committed, proactive, and creative as they consider solutions that best serve the students' needs. This will also require that they put in the time, effort, and money required to aid students' advisors. Understanding the impact of the pandemic on perceived stress among college and university students may affect academic performance, dropout rates, and has the potential for exacerbating existing mental health symptoms. This study's results highlight the need to promote preparedness for remote learning as a protective factor. It is apparent that self-efficacy buffers the stress level of students. Academic programs at the college and university level could consider implementing online stress reducing interventions to teach effective strategies for increasing self-efficacy in the face the environmental stressors. In addition, helping students establish greater social support groups online can be a mechanism for decreasing feelings of isolation.

Strengths

To our knowledge this is the first COVID-19 study that included college and university students representing 47 states in America and Puerto Rico. The study sample included a heterogeneous group of college and university students including a diversity of ages, socioeconomic backgrounds, races, ethnic backgrounds, and multiple disciplines. Minorities of multiple racial and ethnic backgrounds were highly represented. This is also among the first studies to include sex assigned at birth and as well as gender expression as a choice in the survey. This study included respondents living in rural areas as well densely populated regions such as New York, Florida, and California.

Limitations:

Previous studies investigating levels of stress among college and university students during the pandemic revealed an increase in suicidal ideation (Zhou et al., 2020). The impact of the combination of stressors due to COVID-19 and targeted risk factors on mental health can be clarified in future research. Future investigations should look more comprehensively at the impact of COVID-19 stressors on targeted risk factors and hopelessness.

The questionnaire was conducted with an online sample which implies that only individuals with access to the internet were included. Additionally, the interpretations of the study apply to a specific population of students enrolled in college. Therefore, they may not be generalizable to other student groups or the general population.

The study did not assess the impact of anger or a history of personal difficulties, which has been found in the literature to be a risk factor that mediates ability to cope effectively with stressors (Williams, 2017). Our survey results were also limited by the lack of additional factors such as medical conditions that might have increased students concerns for their ability to cope with the potential dangers of a pandemic. Furthermore, the abbreviated version of the Perceived Stress Scale-4 was used and thus may not reflect all the constructs of the original PSS-14. Since the PSS-4 measures self-reported stress within a month's duration, the researchers were able to assess coping skills and associated behaviors during acute stress, but were not able to assess coping skills and associated behaviors during chronic stress. The college and university students' self-reported perceived stress levels may also have been heightened due to the unprecedented nature of the COVID-19 pandemic, and so the results may not be generalizable to other stressful college experiences. Finally, this study did not measure academic achievements pre- and post-COVID-19.

Directions for Future Research:

Future studies should look at the impact of covariates such as family history in order to obtain additional information on factors that exacerbate stress in college and university students. Anger has been found in the literature to be a risk factor that mediates ability to cope effectively with stressors. Investigating the impact of anger as well as a history of personal difficulties would better inform our understanding of the role played by multiple variables on perceived stress. Future research should also include academic achievements pre- and post-crisis to better understand the implication of stressors during pandemics.

Conclusion:

The findings of this study highlighted an increase in perceived stress among college and university students and may serve as an impetus for college administrators to increase mental health programs targeting students during events of heightened stress. The researchers plan to conduct a study comparing the relative perceived stress levels of state university students and private university students. Understanding the challenges that students in higher education experience during catastrophic conditions such a pandemic will allow mental health experts and counselors to work with public health officials to develop specific strategies that address negative health behaviors in this population.

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Development of an Interventional Plan Based on the Challenges of the Older Persons during a Volcanic Eruption: A Mixed Method Approach

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ABSTRACT

With a lot of natural disasters that occurred in the world and the vulnerability of the older persons during a natural disaster, the researchers aim to elicit the challenges that the older persons experienced during a natural disaster and the impacts of those challenges in their lives as basis for the development of an interventional plan. A sequential explanatory mixed-method design was employed that has two phases; a quantitative phase, through surveys, then a qualitative phase, through in-depth interviews. This study determined the demographic profile; the challenges during a natural disaster in terms of physiological-physical, self-concept, role function, and interdependence; and the relationship of the demographic profile and their challenges. A total of two hundred community older persons served as respondents in the quantitative phase while six informants participated in the qualitative phase upon reaching the point of data saturation. A descriptive statistics and eta-squared were used while Colaizzi's method was utilized in analyzing the qualitative data. In view of the findings of the study, the researchers therefore concluded that there is no significant relationship between the demographic profile and the challenges faced by the older persons during a volcanic eruption. Most participants were unfazed by the challenges brought about by the volcanic eruption except for the interdependent adaptive mode. Furthermore, fear is among the leading human emotion that was expressed by the interviewees as the Taal volcanic eruption was perceived by them as a threat of harm, not only to their family, but also to their property. The community older persons were in need of greater assistance during the evacuation as evidenced by their uncertainties in regard to where to go. The physical struggle was experienced during evacuation, but the fear of uncertainty was more overwhelming. Problems with their interdependence adaptive mode were also present from their experiences. Thus, as an offshoot of this study, interventional plan for the older persons are targeted to maintain or encourage independence.

Keywords: Interventional plan, challenges, older persons, volcanic eruption, mixed method

INTRODUCTION

A natural disaster is an act of nature such magnitude as to create a catastrophic situation in which the day-to-day patterns of life suddenly disrupted and people are plunged into helplessness and suffering, and as a result, need food, clothing, shelter, medical and nursing care and other necessities of life, and protection against unfavorable environmental factors and condition. Every year, natural disasters kill around 90,000 people and affect close to 160 million people worldwide. Natural disasters include earthquakes, tsunamis, volcanic eruptions, landslides, hurricanes, floods, wildfires, heat waves and droughts. They have an immediate impact on human lives and often result in the destruction of the physical, biological

and social environment of the affected people, thereby having a longer-term impact on their health, well-being and survival (World Health Organization, 2020).

Our Earth has suffered a great deal from these disasters that have repeatedly put a strain on people's lives. If we look at the average over the past decade, approximately 60,000 people globally died from natural disasters each year, representing a total of 0.1% of global deaths (Ritchie & Roser, 2019). One specific example of a natural disaster is volcanic eruption that may cause severe effects to human life. According to Loughlin et. al. (2015), most of Earth's atmosphere, water, and crust were delivered by volcanoes, and volcanoes continue to recycle earth materials. The National Academies of Sciences, Engineering, and Medicine (2017) posits that more than a dozen volcanoes are usually erupting at any time somewhere on Earth, and close to 100 erupt in any year.

The Philippines is one of the most high-risk countries in the world for experiencing natural disasters. In fact, the Philippines has suffered from an inexhaustible number of deadly volcano eruptions, earthquakes, and other natural disasters. This is due to its location along the Ring of Fire – a large Pacific Ocean region where many of Earth's volcanic eruptions and earthquakes occur (Philippines: A Country Prone to Natural Disasters Journal, 2013).

On January 12, 2020, Taal Volcano located in the province of Batangas, CALABARZON Region began showing signs of unrest after 43 years of inactivity. According to the Philippine Institute of Volcanology and Seismology (PHIVOLCS), increasing steam activity was observed in at least five areas inside the main crater with frequent phreatic explosions that generated a steam laden tephra column reaching 10-15km high. Heavy ash fall from the ongoing eruptions of Taal has reportedly fallen southwest of the volcano island in Cuenca, Lemery, and Taal, Batangas. Meanwhile, according to the report of Gutierrez (2020), the toxic ash and smoke, reeking of sulfur and other noxious gases, have transformed the verdant island, a popular tourist spot, into a vast carpet of lifeless gray.

According to the National Center of Environmental Health (2018), the most common cause of death from a volcano is suffocation. Volcanic eruptions can result in additional threats to health, such as floods, mud slides, power outages, drinking water contamination, and wildfires. Health concerns after a volcanic eruption include infectious disease, respiratory illness, burns, injuries from falls, and vehicle accidents related to the slippery, hazy conditions caused by ash. Exposure to ash can be harmful to infants, elderly people, and people with respiratory conditions such as asthma, emphysema, and other chronic lung diseases may have problems if they breathe in volcanic ash. Fine ash fall can cause irritation and breathing problems especially among the elderly and children (Philippine Institute of Volcanology and Seismology, 2020).

As stated by Tschakert et. al. (2018), both children and the older persons tend to be more vulnerable because they have less physical strength to survive disasters and are often more susceptible to certain diseases. According to the study of Shih et. al (2018), older persons are more likely than others in a community to be socially isolated and have multiple chronic conditions, limitations in daily activities, declining vision and hearing, and physical and cognitive disabilities that hamper their ability to communicate about, prepare for, and respond to a natural disaster.

Since there have been a lot of natural disasters that occurred in the Philippines, especially with the recent Taal volcanic eruption and the vulnerability of the older persons during a natural disaster, the researchers aim to elicit the challenges that the older persons experienced during a natural disaster and the impacts of those challenges in their lives as basis for the development of an interventional plan based on the challenges of the older persons during a volcanic eruption.

METHODOLOGY

Research Design

This study utilized a mixed-method research design. It helped the researchers get a better understanding of the research problem in eliciting the challenges faced by community older persons during a volcanic eruption towards the development of an interventional plan for community older persons when a natural disaster happens.

A sequential explanatory design was employed that has two phases; a quantitative phase, through surveys, then a qualitative phase, through in-depth interviews. The qualitative results aided in explaining and interpreting the statistical findings, or helped examine more in detail the unexpected results in the quantitative study. Fundamentally, a sequential explanatory method provides a general picture of the research problem with the quantitative data while the qualitative data will refine, extend or explain the general picture.

Sample and Sampling Techniques

The respondents were selected based on the inclusion criteria set for the study. The significance of the demographic profile of the older persons such as the age, sex, marital status, educational attainment and economic status have been identified in this research.

In this study, the respondents were older persons that were directly affected by the volcanic eruption of the Taal Volcano in Batangas. Public records of statistics were utilized to determine how prevalent the disaster was in the said region. For the quantitative portion of the research, the sample size was determined using Slovin's formula. While for the qualitative part, the number of participants were determined using purposive and convenience sampling.

The researchers utilized a purposive-convenience sampling, a non-probability sample will be selected based on the criteria set by the researchers and the objective of the study. Convenience sampling pertains to using the most conveniently available people as respondents, although it does not necessarily mean that respondents will be known to the researchers. Visiting evacuation centers or door to door interviews is sampling by convenience meanwhile, purposive sampling is sampling with a purpose in mind. This was practiced for both quantitative and qualitative portions of the study.

The inclusion criteria that the researchers set to the respondents is that the older person should be (1) age of 65 and above, (2) experienced a natural disaster (Taal volcanic eruption), (3) resides within the barangay of Lemery, 17 kilometers away from the Taal Volcano, (4) should be residing in Batangas for at least 2 years and (5) the older person must be able to read and understand the questionnaire.

For the qualitative part of the study, the six (6) informants have been chosen by the researchers. Purposive-conve-

nience sampling has been used to identify who was available at the moment. The informants must also fit the criteria set by the researchers. Informants should be (1) age of 65 and above, (2) experienced a natural disaster (Taal Volcanic eruption), (3) resided within the barangay Dayapan Lemery Batangas, (4) should be residing in Batangas for at least 2 years, (5) older person who do not have comorbidity or any mental illness (e.g. dementia) that can affect the data has been excluded from the study.

Research Instrument

A self-made questionnaire was utilized for the quantitative part of the research. It focused mainly on the demographic profile of the respondents as well as the challenges they faced during a natural disaster anchored on the four (4) adaptive modes of Sister Callista Roy's Theory of Adaptation.

The quantitative research instrument is divided into two (2) parts. First, is the demographic profile of the respondents, which includes the age, gender, marital status, educational attainment and socio-economic status of the respondents. The second part includes questions pertaining to the challenges they faced during a natural disaster despite their old age in terms of physiological-physical challenges, self-concept challenges, role function challenges, and interdependence challenges.

The questionnaire was submitted to a panel of three (3) experts. One was from the National Disaster and Risk Reduction Management Council (NDRRMC), the second was from the Department of Health (DOH), and the third was from Philippine Red Cross, for face and content validity. Lawshe Method will be used where the three (3) validators will meet and ask to review the validation using the categories in terms of what is to: Accept, Revise, Reject.

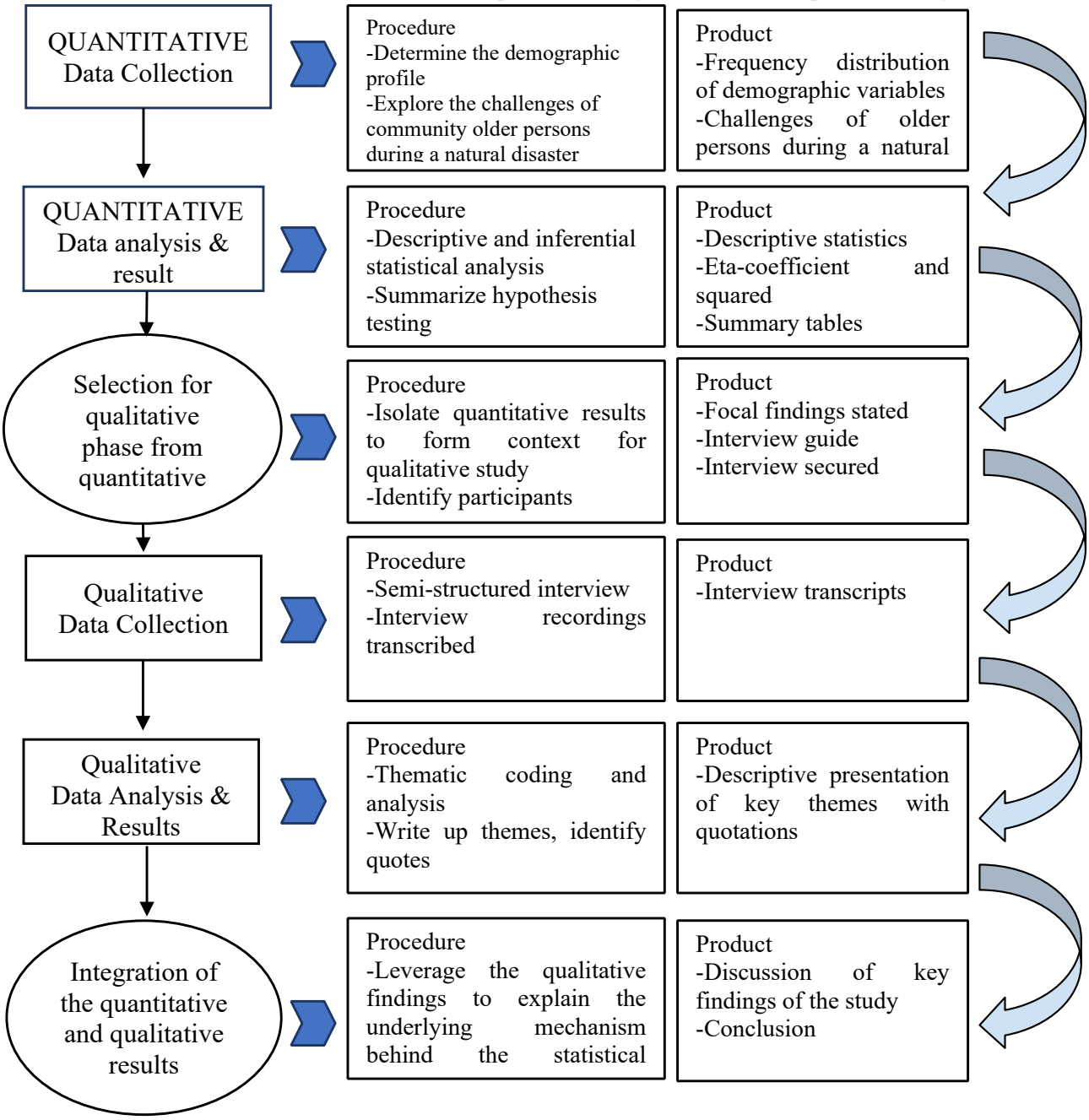

Figure 1: Illustration of Sequential Explanatory Mixed Method Design

After the satisfactory content validity by the three (3) experts using the Lawshe Method, a pilot-testing of the questionnaire was conducted until each dimension in terms of challenges experienced by older persons during a natural disaster that yielded 0.778 Alpha score for reliability using Cronbach's Alpha.

The qualitative portion of this research utilized in-depth semi-structured interviews that contain guide questions delving deeper into the challenges they faced during the natural disaster.

Statistical Treatment of Data

The first problem specific to the demographic profile of the respondents was treated using descriptive statistics, specifically the frequency distribution and percentage. The tabularized numbers allowed the researchers to have a glance at the entire data conveniently.

For the second research problem that deals with the challenges experienced by older persons during a volcanic eruption, weighted mean was used to analyze the data. Since the Likert scale was utilized in the survey, the weights on each data would be based on whether they strongly agree, agree, disagree and strongly disagree.

In order to determine the relationship between the demographic profile of the respondents and their challenges, the Eta-squared was used. This design is specifically used for ANOVA models wherein the relationship between nominal data and interval data are tested for significance. The ETA coefficient was also used to determine the strength of association between the categorical variables and the dependent variables.

Thematic analysis was used in interpreting the qualitative data. The researchers closely examined the data, a set of texts, usually interview transcripts, to identify common themes - topics, ideas and patterns of meaning that come up repeatedly.

RESULTS & DISCUSSIONS

1. DEMOGRAPHIC PROFILE OF THE RESPONDENTS

1.1.Age

Two hundred respondents in Barangay Dayapan, Lemery, Batangas were sought after by the proponents of this

Table 1
Frequency and Percentage Distribution of the Demographic Profile of Respondents in Terms of Age

Age	Frequency	Percentage (%)
Young Old (65 years old - 74 years old)	103	51.5%
Middle Old (75 years old - 84 years old)	71	35.5%
Old-Old (85 years old and above)	26	13.0%
Total	**200**	**100.0%**

Table 2
Frequency and Percentage Distribution of the Demographic Profileof Respondents in Terms of Gender

Gender	Frequency (*f*)	Percentage (%)
Male	101	50.5%
Female	99	49.5%
Others	0	0.0%
Total	**200**	**100.0%**

Table 3
Frequency and Percentage Distribution of the Demographic Profile of Respondents in Terms of Marital Status

Marital Status	Frequency (*f*)	Percentage (%)
Single	9	4.5%
Married	102	51.0%
Widowed	88	44.0%
Separated	1	0.5%
Total	**200**	**100.0%**

paper to come up with the data needed in this study. The respondents are all part of the senior citizen age bracket and the researchers' divided them according to: Young-Old (65 years old-74 years old), Middle-Old (75 years old-84 years old) and Old-Old (85 years old and above). Among the three categories for senior citizens, the majority of the respondents were Young-Old (65 years old-74 years old), which consists of 103 respondents and is equivalent to 51.5% of the respondents. 71 respondents came from the Middle-Old (75 years old-84 years old) category with an equivalent of 35.5%. Then, 26 respondents came from the Old-Old category (85 years old and above) and is equivalent to 13%.

1.2. Gender

The respondents are divided into three categories, male, female and others. 101 out of 200 respondents were males and is equivalent to 50.5%, then 99 respondents were females and is equivalent to 49.5%. No one from the respondents answered the Others option.

1.3. Marital Status

The marital status category is divided into four which are single, married, widowed and separated. 102 respondents are married and this is equivalent to 51%. 88 respondents are widowed and have an equivalent of 44%. There were also 9 respondents who are single and have an equivalent of 4.5%. Lastly, 1 respondent is separated which is equivalent to 0.5%

1.4. Previous Medical History

The diseases with the highest level of frequency is Arthritis which accounts for 70 respondents and is equivalent to 22.2% followed by UTI with 50 respondents and is equivalent to 15.9%. Next is Diabetes with 31 respondents and equivalent to 9.8%, Cataract with 28 respondents and equivalent to 8.9%, Hearing Loss with 25 respondents and equivalent to 7.9%, Asthma with 23 respondents and equivalent to 7.3%, Hypertension has 16 respondents equivalent to 5.1%, Stroke with 13 respondents equivalent to 4.1%, Kidney failure has 12 respondents equivalent to 3.8%, COPD 11 respondents equivalent to 3.5%, Pneumonia has 10 respondents equivalent to 3.2%, Glaucoma 8 respondents equivalent to 2.5%, Gastric Ulcer 6 respondents equivalent to 1.9%, Bone fracture and Tuberculo-

Table 4
Frequency and Percentage Distribution of the Demographic Profile of Respondents in Terms of Educational Attainment

Educational Attainment	Frequency (*f*)	Percentage (*%*)
Finished College	5	2.5%
Unfinished College	5	2.5%
Finished Highschool	19	9.5%
Unfinished Highschool	27	13.5%
Finished Elementary	80	40.0%
Unfinished Elementary	64	32.0%
Vocational Courses	0	0.0%
Total	**200**	**100.0%**

Table 5
Frequency and Percentage Distribution of the Demographic Profile of Respondents in Terms of Monthly Income Per Household

Monthly Income Per Household	Frequency (*f*)	Percentage
Less than Php 10,957	192	96.0%
Php 10,957 - Php 21,914	8	4.0%
Php 21,915 - Php 43,828	0	0.0%
Php 43,829 - Php 76,699	0	0.0%
Php 76,700 - Php 131,484	0	0.0%
Php 131,485 - php 219,140	0	0.0%
Above 219,140	0	0.0%
Total	**200**	**100.0%**

sis both have 5 respondents equivalent to 1.6%, and lastly, Cancer (unknown what type) has 2 respondents equivalent to 0.6%.

1.5. Year of Diagnosis

Year of diagnosis is divided into 5 years per category and timed from 1961 to 2020 being our respondents are all senior citizens. Majority of the respondents were diagnosed with their diseases from the year 2016-2020 and this has a frequency of 165 equivalent to 82.5%. Next is 2011-2015 with 58 respondents and equivalent to 29% followed by 2006-2010 with a frequency of 14 equivalent to 7%, then 2001-2005 with 4 respondents equivalent to 2%. Lastly, the years bracket of 1996-2000, 1976-1980, and 1961-1965 has only 1 respondent and is equivalent to 0.5%.

1.6. Educational Attainment

The educational attainment is divided into 7 categories and these are college graduate, college undergraduate, high school graduate, high school undergraduate, elementary graduate, elementary undergraduate, and vocational courses. 80 respondents were elementary graduates which is equivalent to 40% followed by elementary undergraduates which accounts for 64 respondents and is equivalent to 32%. Next is high school undergraduates with 27 respondents and is equivalent to 13.5%, high school graduates were 19 respondents equivalent to 9.5% and lastly, college graduates and college undergraduates account for 5 respondents each equivalent to 2.5%.

1.7. Monthly Income Per Household

Monthly income per household is divided into 7 categories. Amongst those categories, 196 out of 200 respondents which is equivalent to 96% have less than Php 10,957 monthly income, while 8 out of 200 respondents, which is equivalent to 4% have a monthly income of Php 10,957 - Php 21,914.

2. CHALLENGES OF THE COMMUNITY OLDER PERSONS DURING A VOLCANIC ERUPTION

2.1 Physiologic-Physical

The overall level of challenges faced by the community older persons during a volcanic eruption in regards to the physiologic-physical aspect has an overall mean of 1.7920 with an interpretation of 'disagree'. Meaning that they have little to no problems when it comes to the physical and chemical processes involved in the function and activities of evacuating and surviving a natural disaster.

2.2. Self-Concept

Questions pertaining to the Self-Concept adaptive mode have an overall mean of 1.7907 which means that the respondents disagree about the challenges experienced during a volcanic eruption. This implies that most of the community older persons did not experience any problems with their psychic and spiritual ability, body image and personal self as they feel secure about themselves.

2.3. Role Function

Questions pertaining to the Role Function adaptive mode have an overall mean of 2.0267 which means that the respondents disagree about the challenges experienced during a volcanic eruption. This implies that the community older persons do not have any problems with their social integrity because they know their relation and purpose to the society.

2.4. Interdependence

Questions pertaining to the Interdependence adaptive mode have an overall mean of 3.0450 which means that the respondents agree about the challenges experienced during a volcanic eruption. This implies that the community older persons generally have a problem when it comes to the communication between the older persons and the people in the community.

3. RELATIONSHIP BETWEEN THE DEMOGRAPHIC PROFILE AND THE CHALLENGES EXPERIENCED BY THE RESPONDENTS DURING A VOLCANIC ERUPTION

3.1. Gender

There is no significant relationship between the respondent's gender and the challenges they have faced during a volcanic eruption in terms of Physiologic-Physical, Self-Concept, Role-Function and Interdependence. Eta-coefficient had a result of 0.010817471, 0.055596628, 0.062237018 and 0.041277144 respectively indicating that there is no correlation between the two variables. Meanwhile, the Eta-squared of 0.00716, 0.003033, 0.008889, 0.000238 respectively, indicating the percentage of the effect size between the two variables.

3.2. Age

There is no significant relationship between the respondent's age and the challenges that they experienced during a volcanic eruption in terms of Physiologic- Physical, Self-Concept, Role Function and Interdependence. Eta- coefficient had results of 0.044134645, 0.107253307, 0.142467944, and 0.074606188 respectively indicating that there is no correlation between the two variables. Meanwhile, the Eta-squared of 0.001947867, 0.011503272, 0.020297115, and 0.005566083 respectively, the percentage of the effect size between the two variables.

3.3. Marital Status

There is no significant relationship between the respondent's marital status and the challenges that they experienced during a volcanic eruption in terms of Physiologic- Physical, Self-Concept, Role Function and Interdependence. Eta- coefficient had results of 0.113109, 0.116306, 0.083037, and 0.106225 respectively indicating that there is no correlation between the two variables. Meanwhile, the Eta-squared of 0.012794, 0.013527, 0.006895, and 0.011284 respectively, indicating the percentage of the effect size between the two variables.

3.4. Educational Attainment

There is a definite but small relationship between the respondent's educational attainment and the challenges that they experienced during a volcanic eruption in terms of Physiologic- Physical and Interdependence, with the Eta- coefficient had results of 0.254712 and 0.230664 respectively indicating that there is a definite but small relationship between the two variables. Meanwhile, the Eta-squared of 0.064878 and 0.053206 respectively, indicating the percentage of the effect size between the two variables.

There is no significant relationship between the respondent's educational attainment and the challenges that they experienced during a volcanic eruption in term of Self- Concept and Role Function, with the Eta- coefficient had results of 0.184692 and 0.142365 respectively

indicating that there is no significant relationship between the two variables. Meanwhile, the Eta-squared of 0.034111 and 0.020268 respectively, indicating the percentage of the effect size between the two variables.

3.5. Economic Status

There is no significant relationship between the respondent's economic status and the challenges that they experienced during a volcanic eruption in terms of Physiologic- Physical, Self-Concept, Role Function and Interdependence. Eta- coefficient had results of 0.084616, 0.055074, 0.094283, and 0.015443 respectively indicating that there is no correlation between the two variables. Meanwhile, the Eta-squared of 0.00716, 0.003000, 0.08889, and 0.000238 respectively, indicating the percentage of the effect size between the two variables.

4. EXPERIENCES OF OLDER PERSONS DURING A VOLCANIC ERUPTION

Both purposive and convenient samplings were utilized in providing the sample until data saturation was reached. The sampling method came up with six (6) eligible informants among the 200 community older persons in Barangay Dayapan, Lemery Batangas. During the interview, the informants shared their experiences during the Taal Volcano eruption.

Using Colaizzi's methodology, significant themes were extracted from the narrative statements of the (6) informants. A rich description of the phenomenon, the experiences of the older persons during a volcanic eruption was extracted and the phenomenological residuum consisted of meanings and experiences they intended. Metaphorical themes have been made after significant statements from the informants have been clustered.

Fear of Tomorrow

Fear can be described as a distressing emotional reaction of human beings toward an impending danger, threat, or harm that arises. The community's older persons experienced fear during the Taal Volcanic eruption. Fear of the danger brought about by earthquakes, fear of losing their homes, fear of their own and family's safety, fear of another volcanic eruption, fear of isolation, dependency and even death - fear of what tomorrow may bring. All these were depicted and proved by the statements of the informants.

"We were scared, we felt scared. Because of the quake, we can't say if our house will collapse. What will fall on us? But we left the house then. I was really scared."

"Takot po, takot ang aming naramdaman. Dahil po sa yanig ay hindi po naming masabi kung babagsak ang aming bahay. Anong babagsak sa amin. Pero kami'y lumabas ng bahay noon. Talaga hong matindi hong takot."

"We were not scared."

"Ay di kami'y takot."

"I was scared, and our house might collapse. And maybe the volcano will erupt."

"Ay takot eh, at baka gumuho ang aming bahay. At baka pumutok pa ang bulkan eh."

"It was scary, you would have thought that our house might collapse"

"Ay katakot ay akala mo bagang parang masisira ang aming bahay eh."

"I was scared, because the earthquake was really strong"

"gawa nang takot ay dahil talaga namang napaka higpit ng yanig eh."

"We were scared, because of the earthquake"

"Ay kami'y takot laang ga dahil sa yanig."

Building a life and maintaining a routine in the face of fear of this nature prompts communities to draw on reserves of strength that they build and maintain as a collective. Victor Turner (1974) noted that communities experiencing rupture essentially draw on shared social resources in undertaking reconstruction in its wake; he extends the concept of "communitas" to describe the depth of social connections that, if sufficient, can sustain groups of people through their reconstruction in the wake of trauma (MacDougall, 2010)

Conflict as a Struggle

Struggle erupts when there is a need to exert more effort than usual in the face of difficulties or oppression. During the eruption of the Taal Volcano, the older persons may have experienced difficulties, but those difficulties were not emphasized, as their priority was to find a safe place for them. Although there were some barangay officials circulating and spreading the news about the provided transportation and the evacuation centers, the vehicles were limited and not all of the locals received word because of the chaos that was happening. Conflict as a struggle was depicted in some of the informants' narrations.

"We could not see the road"

"Hindi namin makita yung daan."

"It was difficult, we didn't know where to go that day"

"Ay di napaka hirap po ay dahil hindi po naming alam kung saan kami pupunta nung araw na iyon."

"We had a hard time seeing, since it was already night time and it was dark"

"Ay hirap kaming makakita gayonggabi na at madalim"

"It was difficult, since out feet are buried into ash"

"Ay medyo mahirap-hirap po't gawa po nang mga paa nami'y lubog po sa abo"

"That night, there was nothing to think of anything, but to leave our place"

"Nuong gabing iyon ay wala namaisip kundi ang maka alis laang sa aming lugar."

"Fear was created because of the relentless shaking of the earthquake"

"Gawa ang takot dahil sa walang tigil na pag yanig ng lindol eh"

"Not many people are piled up and we are already participating there"

"Ay di maraming tao ay tumpoktumpok at lahok lahok na kami doon"

"We are no longer allowed to stay in our place and everyone has fled. At the mercy of God, we ate and stayed there."

"hindi na kami pinag-stay sa aming lugar at nagsilikasan na din lahat. Sa awa naman ng Diyos kami'y nakakain at doon muna namalagi."

"We had a ride on a truck that was lent to us by the officials"

"kami'y sumakay sa truck baga napahiram ng aming bokal"

Volcanic eruptions produce hazardous effects for the environment, climate, andthe health of the exposed persons, and are associated with the deterioration of social and economic conditions (Zuskin, 2007). And to add to that, according to the Centers for Disease Control and Prevention, (2018) the most common cause of death from a volcano is suffocation. Volcanic eruptions can result

in additional threats to health, such as floods, mudslides, power outages, drinking water contamination, and wildfires. Health concerns after a volcanic eruption include infectious disease, respiratory illness, burns, injuries from falls, and vehicle accidents related to the slippery, hazy conditions caused by ash.

Man vs. Nature

This is a type of conflict that if given a certain situation in which a person is tormented by natural forces such as storms or animals, in their case, an earthquake and the volcanic eruption, it is also considered as an external conflict.

"Yes, we did not go out and try to get our belonging and other people were not told to evacuate. The outside was covered with thick ash. It was difficult for us to see that night and it was dark. In the afternoon, there was not much ash. If the earthquake wasn't so strong, we wouldn't have gone out first. It was scary, did you think that our house could've collapsed."

"Oo, ay di kami'y naglabasan at nagsipagkuha ng aming mga gamit at di ung ibang mga tao'y sinabihanna lumikas. Sa labas nama'y kakapal ng galbok. Ay hirap kaming makakita gayong gabi na at madalim. Noong hapon nama'y hindi gayon kadami ang galbok. Kung di nga laang malakas ang yanig e hindi muna kami lalabas. Ay katakot ay akala mo bagang parang masisira ang aming bahay eh."

"In God's grace, we were able to bring a few things and we got on the truck that was lent to us by the officials, and were maybe six (6) or seven (7) families there. I was with my wife, two (2) children and three (3) grandchildren."

"Ay saawa naman ng Diyos ay kami'ypandalasnanagayos ng kauntinggamit at kami'ysumakaysa truck baganapahiram ng amingbokal at kami ga'ymgasiguroanim o pitongpamilya doon. Kasama ko noon ay ang akingasawa'tmgaanaknadalawa, at 3 apo."

"It was very difficult, because we didn't know where we were going that day, then we came back here on Monday morning for us to get things, it's not like that either. There was too much ash here. We can't see the road. Then we left again because our house shook so much. We evacuated again and went to Baranggay Bagong Pook, it's also here in Lemery. That was with one of my children. When we got there, it was still the same. The wall of my child's house has almost collapsed, because it is not concrete yet. We evacuated again and went to Batangas. We stayed there in Batangas."

"Ay di napakahirap po ay dahilhindi po naming alam kung saan kami pupuntanungarawnaiyon, taposbumalik po kami ditonung lunes ng umaga. Dahil para po kumuha kami ng gamit, ay di ganun din po. Sobra pong kapal ng abo dito sa amin. Hindi namin makita yung daan. Tapos po kami'y umalis din ulit dahil sobrang yanig ng aming bahay. Lumikas po ulit kami ulit at pumunta po kami sa Brgy. Bagong Pook, dito din po iyon sa Lemery din po yon. Doon po iyon sa isang aking anak. Pagdating po naming doon ay ganun pa din po. Halos laglag na po ung dingding ng bahay ng anak ko dahil hindi pa naman po siya totoong kongkreto. Lumikas po kami ulit nagpunta po kami ng Batangas. Dine po kami nagpirme sa Batangas."

"It was really difficult to clean the ash because it has hardened and looks like cement."

"Talagang kahirap din maglinis ng abo gawa nang nagtigas na at parang nag semento na".

"There were no light and it was dark outside"

"wala nang ilaw at pagkadilim na sa labas"

"It wasn't before we left that we put our belongings to raise. Only the refrigerator that was left on the floor, never mind that. The important thing is that we are alive."

"Ay di bago kami umalis ay itinaas naming ang amingibanggamit. Un laang ref namin ang naiwan sa sahig, ay hayaan na. Ang importante ay kami ay buhay."

Extreme events will have greater impacts on sectors with closer links to climate, such as water, agriculture and food security, forestry, health, and tourism. For example, while it is not currently possible to reliably project specific changes at the catchment scale, there is high confidence that changes in climate have the potential to seriously affect water management systems. However, climate change is in many instances only one of the drivers of future changes, and is not necessarily the most important driver at the local scale. Climate-related extremes are also expected to produce large impacts on infrastructure, although detailed analysis of potential and projected damages are limited to a few countries, infrastructure types, and sectors (Field, Barros, Stocker, & Dage, 2012).

Swimming in the ocean with no land in sight

The mind has a keen way of magnetizing events in peoples' lives. What can seem small and insignificant to one is massive in scale to another. The eruption has left a big impact on the lives of the informants. They were clueless as to how to pick up the pieces of their life since everything seemed so broken. This feeling has been manifested in some of the informants' narrations.

"We didn't know where to go that day"

"hindi po naming alam kung saan kami pupunta nung araw naiyon"

"I wonder what happened to our house, and to my child that was left there"

"ano na kayang nangyari sa aming bahay at sa aking anak na naiwan."

"We don't know where to go"

"hindi namin alam kung saan kami tutungo."

"In those days, we did not know what would happen to us, where we will be heading. We walked all day to find places to go to."

"Kaya po nong mga panahong iyo'y hindi po naming alam ang aming sasapitin. kung saan kami makakarating. Kami po'y halong maghapong nag lakad kakahanap ng mga mapupuntahan."

"We didn't go to Bauan and there was a gang like a basketball court. That's where we were taken. At first, I couldn't figure out where to take us"

"Ay di kami'ynagpunta ng Bauan at doo'ymayroong gang parang basketbulan. Eh di doon kami dinala. Ay sauna'y di mawari kung saan kami dadalhin."

Walking down a dark and scary alley - The Dark Alley

This form of thinking is concerned with endings or outcomes - the fear of things to come is a common event. Worries pose a real threat to people's sense of mental and physical equanimity, and these are crucial. Walking down a dark and scary alley means you do not know what is lurking and what are the dangers

around you. These are evident in some of the informants' narrations.

"In those days, we did not know what would happen to us, where we will be heading. We walked all day to find places to go to."

"Kaya po nongmgapanahongiyoyhindi po naming alam ang amingsasapitin. di mawari kung saan kami dadalhin"

"It was scary, you would have thought that our house might collapse"

"katakot ay akala mo bagang parang masisira ang aming bahay eh"

"I was scared, and our house might collapse. And maybe the volcano will erupt."

"Ay takot eh, at baka gumuho ang aming bahay. At baka pumutok pa ang bulkan eh".

An extreme event may affect mental health directly from acute traumatic stress from an event, with common outcomes of anxiety and depression. It can also have indirect impacts during the recovery period associated with the stress and challenges of loss, disruption, and displacement (Field, Barros, Stocker, & Dage, 2012).

Light after darkness

Light signifies hope after going through the darkest and toughest times. It symbolizes the joy of salvation that even though they were full of uncertainties, prayer became their greatest tool to combat their fear. Life can be very difficult. At times, it seems as though the world is shrouded with darkness and pain. Yet, there is immeasurable light to be found. In the midst of the darkness, we each need to realize that ability we have to use the light within us to illuminate the world for others (Kavar, 2015). Light after darkness as manifested by the informants' statements:

"In God's mercy, we helped a lot of people"

"Aba'ysaawa naman ng Diyos ay kami'ysatumulong ay napakarami naman po."

"In God's mercy, none of us got sick"

"Sa awa ng Diyos ay wala naman pong nagkasakitsa amin."

"The only thing I could do was pray."

"Ang tanging aking nagawa ay magdasal."

"In God's mercy, we ate and stayed there."

"Sa awa naman ng Diyos kami'y nakakain at doon muna namalagi"

"In God's mercy, after two (2) weeks, our house is still intact"

"Pero saawa naman ng Diyos makatapos ng siguro dalawang linggo ay ayos pa ang aming bahay"

"Thank God that we are safe"

"Salamat parin sa Diyos at ligtas kami"

"Barangay councils, yes. My son, the councilor, evacuated us immediately."

"Mga barangay council oo gayun. Inilikas naman kami agad ng aking anak na konsehal"

"We are no longer allowed to stay in our place and everyone has fled. At the mercy of God, we ate and stayed there"

"hindi na kami pinag -stay sa aming lugar at nagsilikasan na din lahat. Sa awa naman ng Diyos kami'y nakakain at doon muna namalagi."

"We had a ride on a truck that was lent to us by the officials"

"kami'ysumakaysa truck baga napahiram ng aming bokal"

5. RELATIONSHIP OF THE QUANTITATIVE AND QUALITATIVE PHASE

After conducting the survey, it was discovered that the respondents generally disagreed with the physiologic-physical challenges during the evacuation from the Volcanic eruption, as well as role function and self-concept challenges. But what they did agree on was the interdependent challenges that consisted of their degree of dependency on external factors, most specially people.

This data was also backed up by the interview of the respondents where they seemed to focus more on their survival rather than the actual physical and emotional turmoil that they were experiencing. It also explained why the chaos and lack of coordination during the evacuation deeply affected them. And also, why the donations at the evacuation center pleased them so much.

The reason why the physiologic-physical challenges did not affect them as much was because they were either too caught up in the chaos to notice their exhaustion and struggle, or because they had resources that alleviated the negative impact of the Volcanic eruption enough for it to be tolerable in terms of physicality i.e. transportation, masks, towels.

There was also no mention of any self-concept or role function problems during the interview of the informants meaning that this was not an issue for them at all.

Also, when it came to the relationship of the demographic profile and the challenges faced by the older persons during a volcanic eruption, almost all of the categories were deemed to have no significant relationship with each other except for the educational attainment, and the physiologic-physical and interdependence, which garnered them a definite but small relationship.

This finding was also backed up by the qualitative portion wherein the higher the educational attainment, the more they were prone to notice the physiologic-physical challenges. This was because they would actively think of methods to control the situation, bringing more awareness to their current state. Also, the higher the educational level, the more they would agree to the interdependent challenges because they were knowledgeable about the different programs available to help them during times of crisis i.e. volcanic eruption.

6. WHAT INTERVENTIONAL PLAN COULD BE DEVELOPED BASED ON THE CHALLENGES OF THE OLDER PERSONS DURING A VOLCANIC ERUPTION?

In an emergency situation, older adults may be less likely to heed disaster warnings, can be reluctant to leave their homes, may require more functional assistance, and are more likely to have chronic medical conditions. Frail older persons and other vulnerable adults have physical and cognitive characteristics that reinforce the need for a specialized disaster response strategy. Older persons demonstrate a variety of unique challenges that may impact their response to a disaster. In this study, interventional plans for the older persons are targeted to maintain or encourage independence. Being independent is an important part to maintain dignity and respect and this can contribute to physical, mental, and emotional well-being of the older persons during a volcanic eruption, or any disaster thereof.

The interventional plan for older persons during a volcanic eruption are outlined below:

INTERVENTIONS			
QUANTITATIVE	**QUALITATIVE**	**PRIOR TO EVENT**	**RATIONALE OF ACTIONS**
The need of assistance from the community to transport them to the evacuation centersafely	**Swimming in the Ocean with no Land in Sight**	Considerations for older persons: • Evacuation plans	Older persons must ask about the emergency plans and procedures that exist in the community. An evacuation plan will mostly consist of identifying go-to routes in the event of evacuation, mapping out primary routes and back up routes in case the roads are impassable, and determining the nearest evacuation centers to be considered as the "safe place". This is needed by the older persons because the informants in the Qualitative phase stated that they don't know where to go.
The need of the community's older persons to be knowledgeable about the resources available for utilization upon an. event of a natural disaster, specifically a volcanic eruption	**Man vs. Nature**	• Emergency preparedness checklist	An emergency preparedness checklist should be encouraged per household. This includes the phone numbers of disaster response teams, learning the community's evacuation routes, emergency contact list (such as family members), and emergency kit
The need of the older persons to have basic necessities on them that might not be readily available or easily accessible during an event of a natural disaster, specifically a volcanic eruption, so that they don't have to depend on their community to provide for their extensive basic needs.	**Conflict as a Struggle**	• Emergency kits and information on how to evacuate, evacuation centres, etc.	Emergency kit involves preparation of basic disaster supplies that includes water, non-perishable canned foods, clothing, prescription medications and first aid kit, blankets and towels, flashlights with extra batteries, documents and identification cards, extra money, and other special items for the older person such as assistive devices if needed.
The need of older persons to maintain basic physical integrity and health during times of natural disasters, specifically a volcanic eruption, so that they don't have to depend on their community to provide for their extensive basic needs.	**Light After Darkness**	• Strategies for maintaining hydration, nutrition, and other accommodations (e.g., hygiene, safety, and rest)	Strategies for maintaining hydration, nutrition and other accommodations such as hygiene, safety and rest are of utmost importance because this is the most primitive of needs. Other than being the requirements for human survival, it has also been called a deficiency need since human beings don't really feel anything when they are met but become anxious or distressed when they are not. A person's health status can deteriorate rapidly when these needs are withheld from them.
The need of older persons to prevent the acquiring infections and/or diseases that cannot be provided for by the community be knowledgeable about the methods to prevent acquiring infections and/or diseases so that they don't have to depend on their community to provide for their extensive basic needs.	**Light After Darkness**	• How to minimize infection and exposure to disease	In order to minimize the infection and exposure of the older persons to diseases during a Volcanic eruption, it imperative to teach them beforehand the methods of staying healthy during a natural disaster, such as performing hand hygiene, being extra careful of eating compromised food, and also being more alert in regards to the people around them. They need to distance themselves from anybody coughing and sneezing. And it is also important to show them the need of wearing protective clothing as much as possible to prevent wounds or injuries when moving through a disaster area since this will compromise their physical integrity.
The need of older persons to have a list of numbers to have a peace of mind when thinking about their community, family or peers.	**Conflict as a Struggle**	• Create a list of contact information for family members and friends. Include it in the emergency supply kit.	A list of contact information for family members and friends must be created as well. This will be included in the emergency supply kit. This is in case your phone runs out of battery and you need to contact a relative or friend.
The need of the community older persons to be provided for in terms of their extensive basic needs during a natural disaster, specifically a volcanic eruption.	**Swimming in the Ocean with no Land in Sight**	Considerations for officials: • Anticipation of low resources due to emergency event	Pre-disaster mitigation measures always have an anticipatory component. The aim is to "get hold of something which has not yet happened". Phases of response and recovery are strongly connected with the stated types of pre-disaster mitigation. This is totally up to the government of Lemery, Batangas to implement and plan.

INTERVENTIONS			
QUANTITATIVE	**QUALITATIVE**	**PRIOR TO EVENT**	**RATIONALE OF ACTIONS**
The needs of the community older persons need to be aware of the plans set in place in order to avoid confusion in regards to whether or not it is safe to evacuate.	**Conflict as a Struggle**	• Emergency planning checklist	There are 5 steps in emergency management. These are: prevention, mitigation, preparedness, response and recovery. The local government should be transparent about this to all who are covered by their governance.
The needs of the older persons must be met in regards to their hesitance to evacuate or not because they need to be lead by the community.	**Swimming in the Ocean with no Land in Sight**	• Evacuation plans and egress	If possible, local responders must come door-to-door and deliver emergency messages or warnings themselves. Government should have clear evacuation plans to disseminate to the residents of Barangay Dayapan, Lemery, Batangas.
The older persons needed advice from our community in decision-making whether it is safe to evacuate or not.	**Swimming in the Ocean with no Land in Sight**	• Plans for shelters designed for older persons and their immediate family	Older persons have different needs than people who are younger than them. Prioritization is key here and strategic anticipation of older persons' needs and considerations.
The needs of older persons to lessen the negative feelings of worry about the safety of themselves, their family, community and peers.	**Swimming in the ocean with no Land in Sight**	• Plans for keeping families together during an eruption/disaster and reconnecting them if the older person is hospitalized.	The local government should make a family communication plan and help all families utilize it. These include, but not limited to: Choosing a post-hazard meeting place for the family, contact numbers for each member of the family and knowing how to contact each other if one is at work, school or other location, location of all nearby evacuation centers, and more.
The needs of older persons to utilize the available resources wherein they would have access to essential devices to assist with their daily life	**Conflict as a Struggle**	• Stocks of appropriate supplies/medical devices that might be needed by an older person (e.g. assistive devices like wheelchair, canes, crutches, walker, oxygen, nasal cannulas, etc)	The local government of Batangas should consider consulting the provincial health unit or the Taal RHU on what necessary supplies the emergency medical team/responders should have access to and types of equipment needed should a disaster happen. Closely coordinate with them about training for emergency responses.
The need of older persons to utilize the resources available in times when they might have forgotten important documents at home due to the rush of evacuating.	**Fear of Tomorrow**	• Plans for emergency	By backing up vital records electronic data and. and relocating valuable inventories to a protected location

INTERVENTIONS			
QUANTITATIVE	**QUALITATIVE**	**DURING EVENT**	**RATIONALE OF ACTIONS**
Older persons' need for assistance and attaining relational integrity	**The Dark Alley**	<u>Considerations for older persons</u>: • Buddy system	During the event, the "Buddy System'' was formulated since older persons may require additional attention in terms of receiving clear, consistent and repeated assurances, explanations of what is happening, and directions on what to do. Also, if the older person is left alone for a while or is living alone, this system tells them that they must consider speaking with neighbors about developing a check-in system together.
In relation to the older person's dependence to the community to give them the necessary care needed.	**Conflict as a Struggle**	• Provide attention to functional needs (including self-care and mobility)	Providing attention to the older persons' functional needs is a must because this makes them a valuable member of the community. Putting attention to their own self, what help they can offer, what they can do for others and knowing they can save themselves and others in the presence of harm and danger will boost their confidence and outlook in life.

INTERVENTIONS			
QUANTITATIVE	**QUALITATIVE**	**DURING EVENT**	**RATIONALE OF ACTIONS**
The need for constant reassurance about their safety and those who and what they value.	**The Dark Alley** **Man Vs. Nature**	• Sentimental feelings about properties and valuables	Older people as much as anyone else, feel sentimental with their property and valued items in the house. This must be respected as each person has different responses to disasters and loss of something that gives too much value. Empathy is an important time in this moment but in this stage, it is imperative that they be reminded of what needed to be attended to first. Some things that are often neglected are shutting off utilities/appliances such as gas and electricity before leaving to minimize the damage done if there is a need to evacuate during a disaster.
The need for older persons to have a safe space, reassurance and clarity	**Swimming in the ocean with no land in sight**	• Safe and comfortable sleeping accommodations	When older persons arrive at a center, they should notify the shelter management of any needs theymay need. These persons must be able to do their best to accommodate them and make them comfortable.
The need of the older persons constant reassurance about the safety from their community, family and peers.	**Fear of Tomorrow**	• Choosing a contact person who will check on them during a disaster, and decide how to communicate with them.	Choosing a contact person who will check on them during a disaster, and decide how to communicate with them. This is an important thing to do during a disaster especially if the older persons are living alone or are left alone when a disaster suddenly strikes. If possible, the older persons must be taught how to put these chosen people on speed dial for easy accessibility. It is recommended to leave a copy beside their home phone(s) and include one in the Emergency Supply Kit.
The need for assistance and prioritization in relation to problem with the older persons' interdependence	**Light after Darkness**	• Acknowledgement of help offered by the medical/emergency team present during a disaster	However strong or capable an older person is, acknowledgement of help offered by the medical/emergency team present during a disaster is a sign of harmony and camaraderie. Everybody needs help, and when help is given, it will be returned to the other person as well.
In response to problems with Interdependence	**Conflict as a Struggle**	Considerations for officials: • Triaging of of older persons needing immediate medical attention	Immediate triaging is imperative to identify who among the older persons should be prioritized when it comes to health care needs. Barangay officials are ordered to be proactive in the enforcement of minimum health protocols in their respective communities. They are taught to promote health and safety,maintain peace and order, and to preserve the comfort and convenience of the barangay inhabitants, especially during a public health emergency. Their standards of care at this crucial event might be altered. Help must be given at all cost, and prioritization of interventions for the community will be changed. Older persons with infants and other vulnerable groups like familieswith pregnant women, mental health and disability problems will be given help first. All hazards' plans shouldincorporate guidance for various scenarios, particularly in the event of a volcanic eruption or any disaster.
This is important for making sure that all residents have been informed to evacuate when needed during natural disasters, specifically a volcanic eruption.	**Swimming in the ocean with no land in sight**	• Documentation and record keeping of residents in the area	In the event of a volcanic eruption, the worst must be assumed. Seepage of ash, lava, dangerous gases and rocks must be anticipated and documentation and record keeping is a vital step to take into account the residents in Barangay Dayapan, Lemery, Batangas.
The need for various methods and prioritization of care available for the older persons to utilize	**Light After Darkness**	• Altered standards of care	Barangay officials are ordered to be proactive in the enforcement of minimum health protocols in their respective communities. They are taught to promote health and safety, maintain peace and order, and to preserve the comfort and convenience of the barangay inhabitants, especially during a public health emergency. Their standards of care at this crucial event might be altered. Help must be given at all cost, and prioritization of interventions for the community will be changed. Older persons living with infants and other vulnerable groups like families with pregnant women, mental health and disability problems will be given help first. All hazard plans should incorporate guidance for various scenarios, particularly in the event of a volcanic eruption or any disaster
The needs of the older persons to be aware of the evacuation plan to minimize the confusion and chaos during the event of a natural disaster, specifically a volcanic eruption.	**Fear of Tomorrow**	• Assisting/prioritizing older persons to find designated places to evacuate	There must be a systematized plan to group older persons and their families in places to evacuate and a plan to assist and prioritize them. The protection of privacy, provision of equitable care, trust, and solidarity must be considered when dealing with vulnerable groups such as the older persons. Older persons

INTERVENTIONS			
QUANTITATIVE	**QUALITATIVE**	**DURING EVENT**	**RATIONALE OF ACTIONS**
This is important to help recognize the extensive care needs of an older person that has to be met during a natural disaster, specifically a volcanic eruption.	**Fear of Tomorrow**	• Identify and Communicate unmet needs	Identification and communication of unmet needs is crucial. There are-some older people who do not speak up unless they are being talked to. No one will ever know what they are feeling at the moment unless they are asked. Sometimes, one simple question is enough to find out their needs. Questions like, *"do you need anything?", "May I give you something to drink?", "Are you feeling alright?", "Can I help you find something/ someone?" and "May I help you with anything else?"* can be a gateway to let out feelings that need to be attended to.

INTERVENTIONS			
QUANTITATIVE	**QUALITATIVE**	**POST EVENT**	**RATIONALE OF ACTIONS**
The promotion and maintenance of independence to the older persons	**Light After Darkness**	Considerations for older persons: • Re-establishment of self-sufficiency	Re-establishment of self-efficiency is important for older persons after a natural disaster so that they can regain their sense of independence without having to rely heavily on external factors to provide resources for them. A simple example of this would be to get right back on their daily routines. Older persons may also be integrated into community activities. Initially they may need support for these things out of fear and trauma from the disaster, but after a while they may be able to go independently.
Promote independence, self-care and value for one's self	**Light After Darkness**	• Continuity of care	Continuity of care means care for one's self and care for others. To promote independence to the older persons, they need to start slowly with daily life decisions. Key elements of independence for older persons would be to have an individual autonomy, the opportunity to be actively involved in decision making processes, and the opportunity to access the physical, social, economic and cultural environment.
Importance of knowing the older person's value for his/ her self, protection and role into the society	**Conflict as a struggle**	• Protection from violence	Protection from violence is included into the interventions formulated. Sometimes, domestic violence happens and it is masked carefully by the family. This must be taken into consideration as all forms of family violence are illegal and unacceptable. Sometimes when a disaster happens, anger is being lashed out to the most helpless and to the most vulnerable. Frustrations are manifested and applied to the older persons and this could be through forms of physical abuse like grabbing, pinching, shoving, slapping, hitting, biting, arm-twisting, kicking, stabbing, shooting, pushing, throwing, kicking, punching, beating, tripping, battering, bruising, choking, shaking among many other forms. If the older persons are affected by family violence, they must be informed that help and support are readily available.
The older persons' need advice from our community in decision-making whether it is safe to evacuate or not	**Man vs. Nature**	• Return to daily routine as soon as possible as long as it's safe and permitted	Return to daily routine as soon as possible as long as it's safe and permitted should be emphasized and promoted. The challenge is that many older persons may have experienced strongly nurturing and highly protective environments. Independence and decision-making power may be foreign concepts, which means that if things happen too quickly, fear and anxiety can take over. The solution is to start slowly, by empowering the individual with daily life decisions as stated above. It can be simple things like how to wash the dishes, what to cook, sweeping the floor, etc.
Guidance for the older persons as they reintegrate themselves into the society	**The Dark Alley**	<u>Considerations for officials</u>: • Assessment of the event, facilities, areas, damages, residents, etc.	Assessing the damage that had occurred should be planned right away after a disaster. The process will most typically involve printing maps, assigning work tickets to employees, writing or documenting findings, manually updating outage management systems and more. There are many ways to do this process, so the chosen approach is going to be very specific depending on the government in Lemery, Batangas and the officials in Barangay Dayapan.
Guidance for the older persons to hasten the renovation of damaged infrastructures for the betterment of their lives and livelihood	**Man Vs. Nature**	• Re-establishment of infrastructures	Re-establishment of infrastructures should be done right away to connect supply chains and efficiently move goods and services across borders if applicable. Infrastructure connects households to get back on track on employment, healthcare and education. The lack of infrastructure (roads transport, bridges, education, electricity, healthcare, communication) even for just a couple of days contribute to economic stagnation.
Guidance, protection, and prioritization in relation to the problems of older persons with Interdependence	**Conflict as a Struggle**	• Designated areas for the community older persons and access to supplies in the evacuation centers	Designated areas allocated for the community older persons as well as access to supplies in the evacuation centers must not be restricted so that help and necessities can be given whenever it is needed. This must be strategically done by the officials in Barangay Dayapanso as to equally distribute goods and services. Everyone should have a fair share of supplies needed by the older persons and their families as well as access to supplies for special needs that must be considered in any disaster.

CONCLUSIONS

In view of the findings of the study presented, the researchers therefore concluded in the Quantitative phase,

1. There is no significant relationship between the demographic profile and the challenges faced by the older persons during a volcanic eruption.
2. Most participants were unfazed by the challenges brought about by the volcanic eruption except for the interdependent adaptive mode.
3. There is a weak correlation between the demographic profile and the challenges experienced by the respondents during a volcanic eruption.

In the Qualitative phase,

1. Fear is among the leading human emotion that was expressed by the interviewees as the taal volcanic eruption was perceived by them as a threat of harm, not only to their family, but also to their property.
2. The community older persons were in need of greater assistance during the evacuation as evidenced by their uncertainties in regard to where to go.
3. The physical struggle was experienced during evacuation, but the fear of uncertainty was more overwhelming.
4. In comparison to the quantitative and the qualitative findings, problems with the interdependence adaptive mode were also present from the experiences expressed by the interviewees.
5. Having been caught in a natural disaster in the same manner with the 2020 Taal Volcano eruption, dependency of the community older persons on the community to attend to their needs and bring them to safety are the serious challenges that they faced, paired with being fearful during a presence of danger, and the fear to act on their own.

Despite the fact that even with the challenges posed by the event, the three adaptive modes which are physiologic-physical, self-concept, and role function were not impacted regardless of the affectation of the interdependence adaptive mode, although some elements of the challenges in self-concept adaptive mode were also present in the qualitative phase of the study.

RECOMMENDATIONS

In accordance to the conclusion of the study, the researchers hereby propose the following recommendations for future use:

To the future researchers, the result of this study may be used in order for them to identify other problems that will fall within the extent of the interdependence adaptive mode, further unraveling what might have been the cause of this predicament.

To the healthcare workers, the result of this study suggests that fear and anxiety are expected for the community older persons to manifest brought about by the volcanic eruption, which will then be a concern to attend to in the future occurrence of a volcanic eruption.

To the emergency respondents, the developed interventional plan by the researchers may be used in addition to their existing emergency response plan to further accommodate the needs of the community older persons during a natural disaster.

To the local government officials, the result of this study suggests to increase the local budget for the expansion of existing evacuation centers, building of better-placed evacuation centers and increase the resource allocation to these sites. Given the random nature of volcanic eruptions, it is only right to anticipate these contingencies and for the local government to be prepared to minimize the challenges experienced by the community older persons.

To the first responders/emergency team, appropriate education about the normal and expected emotional responses that older persons may present following a traumatic event should be honored and respected and how to provide appropriate emotional support. Also, first responders must be able to access primary health care services for assessment and treatment for those who may require additional care.

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BOOK REVIEW:
By *Nelson C. Borrero*

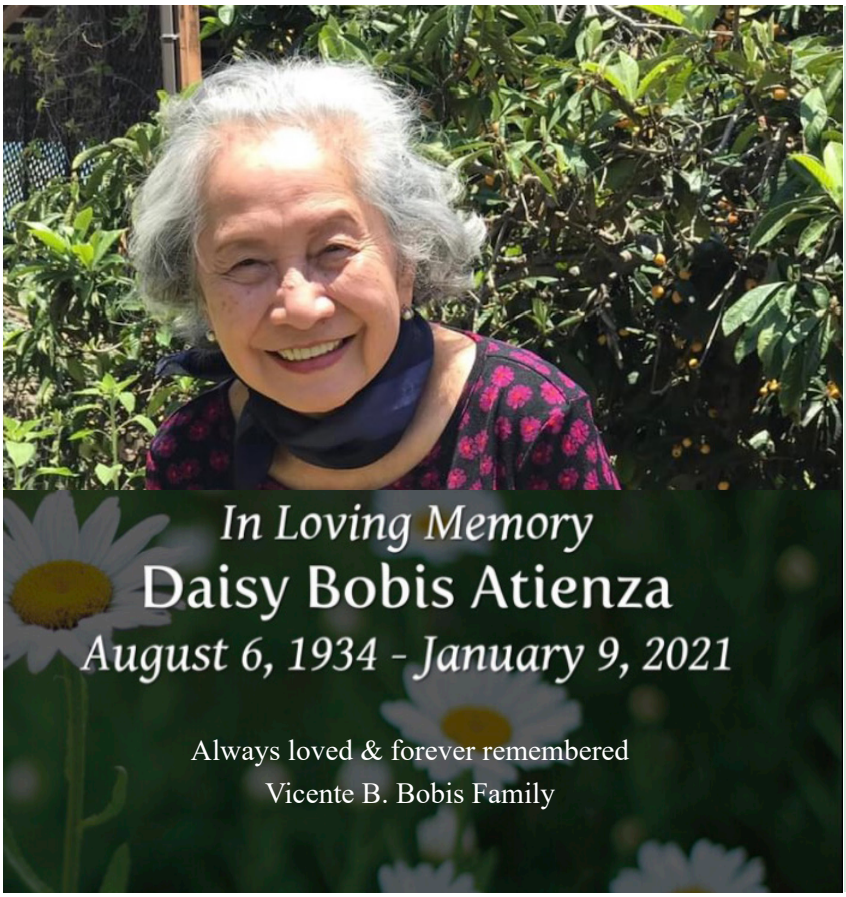
CLASS ’67: *Golden Jubilee*

“A Legacy,” “stunningly amazing,” “beautiful,” “a wonderful keepsake,” “a perfect memorabilia,” are some of the reactive adjectives uttered by those who have seen the book: a compilation of people, places and events spanning over fifty years in the life of the UPCN Class ’67 graduates.

More than two years in the making, Dr. Bernadette Placer, and her sister, Dr. Rizalita Placer (Riz), a member of UPCN alumni Class 1967, diligently gathered notes, pictures (some of which Bernadette took herself) and information of each member of the class and painstakingly put them together into a narrative, beautifully bound, very much worthy of an heirloom. Each page is a canvas that paints and chronicle individual journey through the years. Indeed, it has a unique thread that Bernadette and Riz meticulously stitch together into an elegant fabric and sewn to become a meaningful and handsome tapestry called: ***The Magnificent ’67.***

Their story began during their college student days to the excitement of graduation then to the commencement of real life’s challenges. Many remained in the country, others joined the Filipino diaspora. There were struggles, there were great triumphs, there were tears and certainly a lot of laughter. The merriment and melancholy were all reflected in the book. ***“El sentir de este vivir” --*** the feeling of this life (from a song) --is what the book is all about. You can still hear the echo of the past as you leaf through the pages.

A profound and heartfelt thanks, Bernadette and Riz for your friendship, your care and affection. The class have something meaningful and priceless to bequeath to the next generation…indeed a magnificent legacy, and truly a labor of love.



“Life is a journey of love

Let there be caring in the daily chores of life

Let there be sharing in the richness and fullness of life

Let there be joyfulness despite the sorrows and sadness of life

Let there be lifelong friendships that enrich life

Above all, let there be thankfulness for the blessings of life”

- Daisy Bobis Atienza
Aug 6, 1934 - January 9, 2021

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