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Master of Arts in Nursing

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**EFFECT OF EDUCATIONAL PROGRAM ON KNOWLEDGE AND
ATTITUDE IN HEART FAILURE AMONG STAFF NURSES IN A TERTIARY
HOSPITAL IN MAKATI CITY**

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The thesis attached hereto, entitled “**Effects of Educational Program on Knowledge and Attitude in Heart Failure among Staff Nurses in a Tertiary Hospital in Makati City,**” prepared and submitted by **MS. Zharmaine C. Sanchez**, in partial fulfillment of the requirement for the degree of **Master of Arts in Nursing** with specialization in **Adult Health Nursing** is accepted.

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We, the members of the oral examination panel for **MS. ZHARMAINE C. SANCHEZ** unanimously approved the thesis entitled “**Effects of Educational Program on Knowledge and Attitude in Heart Failure among Staff Nurses in a Tertiary Hospital in Makati City.**” The thesis attached hereto was defended on **June 1, 2020 at UPOU Headquarters Los Baños, Laguna** for the degree of **Master of Arts in Nursing** is hereby accepted.

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ABSTRACT

Patients diagnosed with heart failure requires wide array of health needs that a nurse who exemplifies competency be able manage these patients holistically during the pursuit of care. In order to improve nursing competencies, one must initially care for oneself in order to be teachable that will reach mastery particularly in disease management and later on undergo continuous modeling through trainings and seminars, which all described in Albert Bandura's Self-Efficacy Theory.

With this, the cross-sectional, quasi-experimental study was focused on measuring the knowledge and attitude of nurses caring for patients with heart failure before and after attending an educational program. With the 30 nurses who were identified from Intensive Care Unit, Medicine Ward, Geriatric Ward in Ospital ng Makati, a tertiary hospital, invitation to attend a 60-minute educational program regarding the principles of heart failure management as stipulated in nursing process, Assessment, Diagnosis, Planning, Intervention and Evaluation was undertaken. Significant improvement on scores ($\mu=2-3$ points) in the 40-item knowledge scale was noted post-teaching phase.

With $p<0.05$, there was a significant relation between nurses' level of experience in the area and level of knowledge ($p=0.03$), as well as no. of heart failure patients cared in 4-week duration and level of attitude ($p=0.004$). Meanwhile, there was no significant relationship between the level of knowledge and attitude of nurses towards heart failure management ($p=0.27$).

CHAPTER 1

THE RESEARCH PROBLEM

BACKGROUND OF THE STUDY

This research primarily focused on measuring competencies of nurses towards on rendering care with patients with heart failure as determined with the administration of educational program. The stance of the knowledge and attitude of nurses are propellers of the aforementioned in gauging their capacity to deliver efficient and holistic care. It is recognized that what has the potentiality and ability of a nurse that has been shown extensively to their patients could be counteracted, shared and generated by the latter on terms of caring their own wellbeing. An educational program which elaborates the current practice in the management of heart failure was arranged to determine the difference and relationship of its effect on the nurses' attributes with the premise of their relative intellectual and emotional capableness to handle patients being struck with this long-term cardiovascular disease.

Generally, heart failure is a debilitating disease and tagged as one of the improved health outcomes among these patients, nurses act to encourage patients to improve and modify their health behaviors, medication compliance and clinical consultations. It is centralized more so in the monitoring of patients under at high-risk category of being readmitted (Riley, 2015). In which, it is utterly considered that nurses must enrolled themselves in constant training and pursuits of colloquy to beget enhanced delivery of care that is evidenced based and up to date. This is entirely necessary for nurses attending patients diagnosed with heart failure since they have been verged into the nature of their disease as palliative and debilitating. The long-term course of the disease may extensively require utmost delivery of care driven by a well-trained and competent nurse. Amakali (2015) emphasized that nurses must

embody proper knowledge on the disease process that dictates the nursing intervention in order to yield care especially for patients with heart disease. Not only that, but nurses are also required to be aware of their behaviors while in the terms of professional relationship in these patients. Their positive emotional ration will greatly influence their ability to deliver and bridge the patient to a more recuperated state of health in heart failure disease.

Garris (2013) determined that an education class regarding heart failure is a successful modality in increasing the nurses' knowledge with mean scores of 73.3% and 86.1% on the pre-test and post-test respectively a similar finding noted in the study of Al-Hchaim & Hamza in 2016. But accordingly, the improvement of these scores were deemed as not a guarantee that the instructions of nurses given to patients can either improve per se or enhance patient outcomes. Appropriate reinforcement, follow-up and institutional support are thus recommended to be implemented. On the other hand, attitudes and beliefs of nurses were measured in a study devised by Lea in 2014, which distinctively arose in the aspect of depression in heart failure patients as intervened by an educational program. Wherein, it has resulted that there was a positive influence incurred from educational intervention in terms of patient outcomes with prompt detection and treatment of depression in patients with heart failure.

Limited availability of studies with an aim of measuring these relative competencies, were recognized (Sanad, 2017) which further vindicated the underlying motivation of the study as to address this more under the setting in the Philippines. More so, written literature that discussed the level of attitude of nurses scoping the management schemes in heart failure were finite. This study therefore was focused in studying the relative nursing competencies under the influence of an educational program, which then yielded to provide an additional reliable source of information in this aspect. This

was after in describing the characteristics of nurses with the comparison in terms of ward assignment (Intensive Care Unit, Medicine Ward and Geriatric Ward) that further made it different from the other similar studies.

Statement of the Problem

The study aimed to identify the competencies of nurses in terms of knowledge and attitude as they provide care and management to patients with heart failure with an aid of educational program.

Objectives of the Study

1. To determine the level of knowledge of nurses before and after attending the nursing educational program about heart failure.
2. To determine the attitude of nurses about heart failure in respect to the administration of nursing educational program.
3. To determine the difference of the level of knowledge of nurses during the pre- and post-teaching administration.
4. To determine the difference of the level of attitude of nurses during the pre- and post-teaching administration.
5. To determine the relationship between the nurses' demographic profiles to their level of knowledge and attitude in heart failure.
6. To determine the relationship between the level of knowledge and attitude of nurses in regard to the principles of heart failure and its course of management.

Significance of the Study

Initially, this study aimed to enhance the required competencies of nurses in terms of knowledge and attitude through having them attended the educational program which provided thorough and updated discussion about the principles in the management of heart failure. Not only this, measuring what do nurses know about the

disease process, clinical presentations and interventions necessary to be delivered to these patients can serve as a basis for the Nursing Division of the institution in formulating essential in-service trainings and programs about the aspects that has been found insignificant and deficient in their knowledge as intricated in the results of the study.

In addition, by determining and correlating the level of attitude to their relative experience in caring for patients diagnosed with heart failure could beget the nurses to be aware of their emotional state and imbibe self-improvement on the facets that needs to be addressed in order to partake better outcomes not only for their professional undertaking but also for the provision of improved communication and encounter with patients. Because of this, patients can benefit from this study as they will help them be assured that their nurses who will be assigned with their care and health will be more equipped and competent with prudence and efficiency. More so, having a more knowledgeable and positive attitude within a nurse can impart significant information and behavioral change to their patients with heart failure that will help practice and maintain self-care in the course of living with the disease in their lifetime.

This will be hoped for an effective and substantial health teaching pertinent to heart failure principles, rendered by their respective nurses who had participated in this study and gained learnings in the educational program. Sanad (2017) has already stated that limiting availability of the studies that coveted in measuring knowledge and attitude in the lieu of management of heart failure, hence, the predicament is a factor for the pursuit of the study which will yield not only for critical care nurses, one of the common populations of such study having the nature of the disease as critical and debilitating, but also aimed to include ward nurses whom are aligned in caring for

medical cases. Nevertheless, this study hoped to contribute to the Philippine nursing practice by having reliable accounts relating to the current state of a mere proportion of nurses in the country through its publication to several databases and journals in the future.

Scope and Limitation of the Study

This research study focused on the principles of heart failure essential for teaching to patients which was to be carried out by licensed nurses. This was limited to assessing the baseline knowledge and attitude of nurses and not particularly the process of what and how they carry out these in the course of teaching with patients diagnosed with heart failure. This was also limited to staff nurses in the medical units who have experienced caring and managing patients with heart failure in a hospital setting.

CHAPTER 2

THEORETICAL BACKGROUND

REVIEW OF LITERATURE

The literature search has undertaken through searching in the online databases of EBSCOhost, Proquest, ResearchGate and ScienceDirect with the keywords, “Self-care in heart failure”, “Heart Failure” and “Discharge Teaching in Heart Failure patients”, “Nurses knowledge on heart failure education” scrutinized with publication date from 2005 to 2019. This section was written systematically with initially providing reviews of previous studies about heart failure wherein its pathophysiology process will imply some points in rendering nursing care among these patients. This was followed by reviewing some studies about the principles of managing these patients since previous information about nursing care and needs for heart failure was initially discussed and recognized.

Heart Failure

American Heart Association (2017) described Heart Failure as a medical condition that is chronic and progressive due to inability of the heart muscle to pump enough blood to supply the body’s needs for blood and oxygen. In the Philippines, a study by Tumanan-Mendoza et al. (2017) revealed that there were 16 cases of heart failure for every 1000 Filipino admitted patients in 2014 for a certain medical condition; in which hypertension was noted to be the common etiologic factor. It was concluded that the local mortality rate was significantly higher among western and Asia-Pacific countries. Meanwhile, at Ospital ng Makati, where the study was conducted, there were reported cases as summated below:

Table 1. No. of heart failure patients admitted in 2018-2019

Month	<i>Heart Failure Cases with no known co-morbidity Year 2018</i>			<i>Heart Failure Cases with no known co-morbidity Year 2019</i>		
	<i>ICU</i>	<i>Medicine Ward</i>	<i>Geriatric Ward</i>	<i>ICU</i>	<i>Medicine Ward</i>	<i>Geriatric Ward</i>
January	2	3	3	4	4	3
February	3	3	2	4	4	2
March	3	4	4	8	5	3
April	5	3	2	3	4	3
May	4	2	2	4	4	3
June	6	4	3	5	4	2
July	5	4	4	5	3	4
August	4	3	1	4	4	4
September	3	4	1	4	4	3
October	5	3	3	4	4	4
November	3	4	4	5	3	2
December	6	4	3	3	3	1

Note: Data came from the admitting logbook.

The constant admission rates every month has showed that heart failure was indeed one of the top morbidities in the institution under the department of Internal Medicine. In 2015, Lam wrote about heart failure as a growing problem in Southeast Asia due to the rapidly growing population with risk factors such as Hypertension and Diabetes (Junia, 2016). Accordingly, risk factors for Heart Failure such as hypertension, obesity, smoking, high cholesterol and diabetes were seen to be present in many Filipinos as seen the study conducted by National Nutrition and Health Survey (2013). On the other hand, Heart Failure is a developing disease secondary to aging or existing heart condition commonly such as Coronary Artery Disease, high blood pressure and previous heart attack (American Heart Association, 2017).

Heart failure was accounted for over 1 million primary hospitalizations per year, in which these patients remarkably experience over 3 million secondary hospitalizations per year because of related comorbid conditions (Blecker et al., 2014). In 2015, there were 26 million individuals with heart failure worldwide where 1 in 5

adults aged 40 years old above will acquire heart failure (Lopez-Sendon & Montoro, 2015). An aging population across the globe is seen as one of the causes of this trend (Kim & Hwang, 2013). These patients with heart failure come across with hospitalization due to worsening of symptoms such as shortness of breath, persistent coughing or wheezing, buildup of excess fluid in body tissues, tiredness, fatigue, lack of appetite, nausea, confusion or impaired thinking, and increased heart rate (American Heart Association, 2017), causes also are influenced by social, cultural and economic factors (Mesquita et al., 2017).

Patients with Heart Failure

Collins et al. (2014) discussed that an estimate of up to 50% of patients with Heart Failure admitted in Emergency Department could be sent home after undertaking a brief period of observation to avoid unnecessary admissions and to minimize readmissions. It was observed then that many of these patients in emergency department were assessed to be not acutely ill whom had signs of congestion because of worsening chronic heart failure that only needed symptomatic treatment. Desai (2016) described the patterns of hospitalization of patients with heart failure where peak is at early post-discharge interval, then declined and plateaued significantly at stabilization of disease and then reaccelerated when patient is at the near end of his/her life. The characteristics of hospitalization supported heart failure as a debilitating and lifetime disease that requires the patient to adhere comprehensively with the medical management, symptom monitoring and lifestyle modification.

Mesquita et al. (2017) described the vulnerable phase in patients with acute heart failure wherein a period of microenvironmental changes in lifestyle following an episode of decompensated heart failure could pose an increased risk for adverse

cardiovascular events like death and rehospitalization from heart failure, as this phase has three sub-phases: very early stage (discharged patients before having full improvement in congestion symptomatology, occurs between 4-5 days of hospitalization), early stage (occurs after hospital discharge with an acute heart failure episode), and late stage (occurs up to 6 months after discharge, which has been linked to the reactivation of renin-angiotensin-aldosterone system or RAAS). Generally, these vulnerability phases of heart failure can occur at approximately 6 months after an acute heart failure episode which then determines the clinical prognosis.

Assessment in heart failure included signs and symptoms, medical history and physical examination, and diagnostic tests. In which, clinical presentations will vary depending on the laterality of the heart failure distinguished. For left sided heart failure, patients were noticed to have signs of pulmonary congestion such as tachypnea, cough, crackles, wheezes and blood-tinged sputum, also confusion, orthopnea, exertional and paroxysmal nocturnal dyspnea, fatigue, tachycardia and restlessness; whilst signs such as distended jugular veins, dependent edema, increased in levels of peripheral venous pressure, anorexia and disturbances in gastrointestinal area, ascites and hepatomegaly and splenomegaly were observed in right sided heart failure patients as these were identified as secondary presentations of chronic pulmonary problems (Lippincott Nursing Center, 2019). These were important for every healthcare professional to detect promptly during the course of physical examination that was critical in the diagnosis and later on intervening each specified problem. Meanwhile, laboratory tests such as B-type natriuretic peptide level, serum electrolytes (Calcium and Magnesium) levels, complete blood count, liver function tests, renal function tests, thyroid-stimulating hormone levels, urinalysis, arterial blood gases and blood cultures, HIV virus, Lyme serology, serum ferritin and transferrin saturation,

thiamine levels, troponin and creatinine kinase-MB levels, as well as tests to confirm for any co-morbidity conditions Hba1C for Diabetes Mellitus and lipid profile for Hyperlipidemia were all be needed to undergone by the patient. On the other hand, chest radiography and 2D-echocardiography and even 12-lead electrocardiogram and cardiac stress testing have been helpful for the medical practitioner to strike strong evidence through the parameters of congestion, ejection fraction, anatomical differences, cardiac conduction and heart rhythms to fully confirm the diagnosis of heart failure (King, et. al., 2012).

There are classifications of heart failure that essential in expounding the magnitude of the disease which also served as the basis for intervention for these patients. One, the American College of Cardiology or American Heart Association of Heart Failure which stated the following criterion: A as high risk, patients who has no structural heart disease or symptoms of heart failure, B as structural heart disease, patients without signs and symptoms, C as structural heart disease as patients has prior or recent symptoms of heart failure, D as refractory heart failure (Yancy, et. al., 2013). Second, the New York Health Association Functional Classification which further determined the patients' capacity on mobility stipulated as: I being no limitation of physical activity, II as slight limitation, III as marked limitation and IV as patient being unable to do any activity without causing symptoms of the disease (Lippincott Nursing Center, 2019).

Specifically, the following interventional schemes must be included in the instruction for patients with heart failure which focused on the lifestyle changes require in the self-management of heart failure: a) adopt a low-sodium diet, b) restrict fluid intake to 2liters, c) stop smoking, d) increase activity/exercise at a low to moderate intensity, e) monitor weight daily, f) notify healthcare provider of signs and symptoms

of worsening heart failure such as weight gain (more than 3 lbs. in a week or 2lbs. overnight), g) eliminate alcohol consumption, h) reduce fat and cholesterol in diet (if coronary disease is present), i) learn all signs and symptoms to report to healthcare provider (such as pain in jaw, neck, or chest, increased shortness of breath or fatigue, dizziness or syncope, swelling in feet, ankles or abdomen, palpitations, and racing heart) (Albert & Paul, 2003). It is found out that patient's characteristics such as age, sex, severity of heart failure, co-morbidity, socio-economic factors, educational level, presence of anxiety and depression helps determine the achievement of goals in educating patients with heart failure (Smith, 2005). Other treatment modalities include surgical procedures such as cardiac resynchronization therapy (CRT), installation of pacemakers, implantable cardioverter-defibrillators, coronary artery bypass grafting and percutaneous coronary intervention, valve repairment and ventricular restoration (Dumitru, 2018).

Kollia, et.al. (2016) emphasized the notion that the management of heart failure relied significantly on patient where patient education served as an essential component of nursing care and aimed for the improvement of the ability of the patients in taking care of themselves. Benbow (2009) then suggested that the discharge teaching for these patients must begin on the admission to give them opportunity to absorb information at early time and could raise up queries. This is for the patients witness the importance of an intervention or medication when being started in the hospital; as well as for the healthcare providers to have ample time in reinforcing health teaching and assessing the level of understanding of the patients. There were different ways in evaluating retention among patients when it comes to adapting interventional modalities needed to continue at home. Esquivel, et. al. (2018) concluded that teach-back method was considered as an effective method in assessing and teaching self-

care among patients who were hospitalized with heart failure regardless of old age and dependency. The method encompassed the way the patients in their own words and understanding expounded a certain health information subsequently when they were taught of (Yen & Leasure, 2019). The effectiveness of this evaluation scheme was evident when being utilized at Lehigh Valley Hospital in Pennsylvania, accorded a 12% decreased in readmission cases in 2010 for patients with heart failure who have taken part of the method (Relias Media, 2011).

Knowledge in Heart Failure

Hall (2005) conferred the idea that knowledge begets knowledge which be taken from theoretical and practice medium. This may be utilized to improve care to patients when awareness about the finest knowledge or evidenced based practice are pivoted by the nurse. More so, this has multifaceted base which stipulated scientific evidence through research and evaluation, experience and inner understanding (Moule & Goodman, 2009). This had proven the knowledge of nurses must not be opinion inclined but with thorough study with utter judgement to depend action based on intellectual information.

At this point, nurses play a vital role on guiding the patients in their journey with the disease. Paul (2008) also believed that the effects of educating patients with heart failure before sending them home includes promotion of self-care, reduction of readmission rates and helping them identify problems. This was supported to be efficiently attained if a nurse presented with appropriate knowledge not only about the disease management but more on holistic response. Nurses must be able to comprehend these disease and counteractive nursing concepts that will result in patient's effective understanding during education (Mahramus, et. al, 2014). Improving

self-ability has been the propeller of the nurse to enhance nursing capabilities evoked for every patient's requirement.

American College of Cardiology/American Heart Association conducted a study that dealt with clinical performance measures for adults with chronic heart failure which posed importance on the responsibility of the healthcare professionals to ensure the understanding of the patients and families about the causes of heart failure, prognosis, therapy, dietary restrictions, activity, importance of compliance and the signs and symptoms in its recurrent state. Sundel & Ea (2018) claimed that there is an impact of how well nurses take their teaching jobs to the ability of their patients to grasp such instructions particularly in the management of their disease. Much more, knowledge of nurses must also be systematic in order to present this information to their patients understand these in organized manner. By this, nurses can devise the nursing process indicated as assessment, diagnosis, planning, implementation and evaluation as systematic method that utilizes critical thinking, patient-focused approach, goal-oriented tasks, evidence-based practice and nursing intuition Toney-Butler & Thayer, 2019). This was a vital undertaking as the nurses will be able to share information to their patients in order, especially with heart failure as for the fact that they will be living with illness on the long-term cause not longed for discharged. The significance for the patients fully understands their illness as well as be able to adapt instructions to effective application of every self-care practices and medication administration after the hospitalization were at utmost responsibility of the nurse which can be supplemented by internal study regimen or practices that evidently gathered.

Focusing on heart failure, in the study of de Azevedo, et. al. in 2018, nurses achieved better on the aspects relating to fluid ingestion, sodium restriction, weight control, detection of signs of fluid retention and prevention of clinical decompensation.

In 2007, Willette, et. al. observed that nurses also able to yield correct responses when were asked about daily weight monitoring, asymptomatic hypotension and transient dizziness upon arising, but contrary to home care nurses whom performed weak on the said concepts (Delaney, et. al., 2010). Moreover, Sanad (2017) observed that nurses tend to have low knowledge in the aspect of managing heart failure, but has a positive attitude towards it, which relatively drawn a suggestion that trainings inclined to this facet for nurses as way of improving care for this particular heart condition. This was also noted by Mahramus et al. (2014) as indicated in their prospective exploratory study that there was a lack of knowledge among nurses on the self-care management principles for patients with heart failure, with a low mean score of 71% against a passing rate of 85%.

These trends were very alarming at a point because the guarantee of patient education was also at a critical state if their respective nurse was not fully aware the specificities of their management. Meanwhile, Sundel & Ea (2018) recognized that nurses' knowledge on heart failure principles could be depended on their level of nursing education, area of clinical practice, and relative years of experience.

Attitude of Nurses in Heart Failure

Coban, et. al. (2015) further elaborated the term attitude as either a positive or negative pre-tendency to an indirect reaction, which varied and consequently served as a guidance from every person. Specifically, personal attitude exhibits innermost convictions regardless of the nature of the situation and developed by communicating with their respective environment (Harris, 2014). Sanad (2017) also emphasized that in specializing heart failure management, nurses employ as a vital agent in the areas of signs and symptoms monitoring for cardiac deterioration, therapy compliance, availing education and psychosocial support and counselling. Generally speaking,

attitude of nurses took crucial significance in the profession as it partaken in envisaging ways of people on how they deal with issues and processes in care and decide what is good (Price, 2015).

It was advocated that nurses must exemplify caring, compassion, effective communication, responsibility, accountability, sense of duty and collaboration (Onwumelu & Kroning, n.d.). In that sense, positive attitude entailed good nursing practice. Nurses who are assigned to care for these patients in the acute state of the disease were granted the following roles: a) rapid triage to safe clinical environment, b) objective monitoring in terms of signs and symptoms and in its changes, c) discharge planning and referral to multidisciplinary disease management programme, d) addressing anxiety and updating with accurate information the patient's family regarding the present condition, e) communicating with patient, family and other members of healthcare team (Mebazza, et. al., 2015). With this, rendering bedside care to these patients were daunting as there was a pressure in timely interventions and specialized monitoring. It was believed that the quality of nursing care delivered was initially influenced by the personal behavioral outlook of nurses (Agustinus, 2011), even so their physical, spiritual and social wellness that also influenced the delivery of health services (Altuntas & Baykal, 2008).

In the focus of heart failure, nurses in the primary care setting perceived several features of the disease as irrelevant to their scope of practice, as facilitated with the CORE Needs Assessment Survey, a continuing medical education about the evidenced-based principles in heart failure management (Howlett, et. al., 2017). On the other note, Naderi, et. al. (2017) assessed that positive attitude of nurses pertaining to self-care education in chronic heart failure has significant relationship with their level of education, in-service education and work schedule. In a pre-test-

post-test study conducted by Sundel & Ea (2018), most nurses had reported of increased in initiative to teach patients about the disease after participating in the intervention. In the matter of palliative care, where heart failure patients are ought to receive in a later time, Barrett & Connaire (2018) instigated that cardiac nurses exemplified limiting knowledge particularly in the aspect of pain, symptom control and communication, and yet tends to demonstrate favorable attitude in caring for dying patients tantamount when having a substantial knowledge. It was therefore stressed that knowledge and attitude of nurses have the significant positive influence on helping patients diagnosed with heart failure in the effective management of their disease.

Educational Program in Heart Failure

There is a constant call for nurses to be capable of merging informational sources and apply into their accorded decision-making and practice (Fukuda, 2018). Several opportunities are widely available for nurses in augmenting their relative competencies and qualities, most especially in the core of their intellectual state and behavioral perspectives. In the Philippines, as stipulated in the Continuing Professional Development Act of 2016, section 3, the Professional Regulation Commission mandated the formal use of Instructional Design for all registered and licensed professionals, as a requirement prior to the formal approval of undertaking. This was to ensure that the scopes and inclusions of the program were properly stipulated from its training arrangements, budget, learning objectives, concepts, teaching medium and evaluation schemes.

Nonetheless, the primary proprietors of educating patient regardless of hospitalization is the nurses, whom have the tendency to be lacking in knowledge appropriate in the course of care of heart failure (Sundel & Ea, 2018). For an instance, this was seen among patients specifically admitted for heart failure and left ventricular

systolic dysfunction who have demonstrated significant positive effect with improved knowledge and further retention along with suitable self-care behaviors after they have undergone educational session with a nurse educator (Kommuri et al., 2011). As for nurses, the challenge of reaching their knowledge in heart failure principles with high standard that is propelled for patients who render self-care at home (Dalfo-Pibernat et al., 2019).

Meanwhile, de Azevedo et al. (2018) concluded in a study with 74 nurses from two (2) public hospitals in Brazil have some difficulties in identifying signs and symptoms in worsening heart failure and drug therapy. Albert et al. (2002) viewed nurses tend to be improperly educated in the aspect of heart failure self-management, in which a need of providing them with the appropriate information could further lead to improvements on the contents they contribute to their respective patients. More so, there was a claim that nurses are only routinely caring for heart failure patients and unfortunately does not exhibiting adequacy in educating their patients with heart failure principles attained for self-management (Washburn & Hornberger, 2008). In which, Mahramus et al. (2014) explored that there are findings in several studies which confounded the deficiency of knowledge among nurses especially with concepts of self-care in heart failure.

Schallmo et al. (2018) realized that in order to attain change in these practices, there is a need to include education in all levels of nursing. To date, there is limited number of studies that discusses the quality of competencies of nurses specifically of their knowledge and attitude pertaining to heart failure care and management (Sanad, 2017). This facet of exploration is the intrinsic aim of this research study. As such, Gariss (2004) has evaluated that an educational program (intervention) which has applied in her study tend to contribute on the improvement of nurses' knowledge in

heart failure, which was suggested to be implemented in other healthcare institutions as well. Al-Hcaim & Hamza (2016) even experienced the same trend between educational program and enhanced knowledge in heart failure among nurses as there was highly significant differences in scores during the post-test by study and control groups.

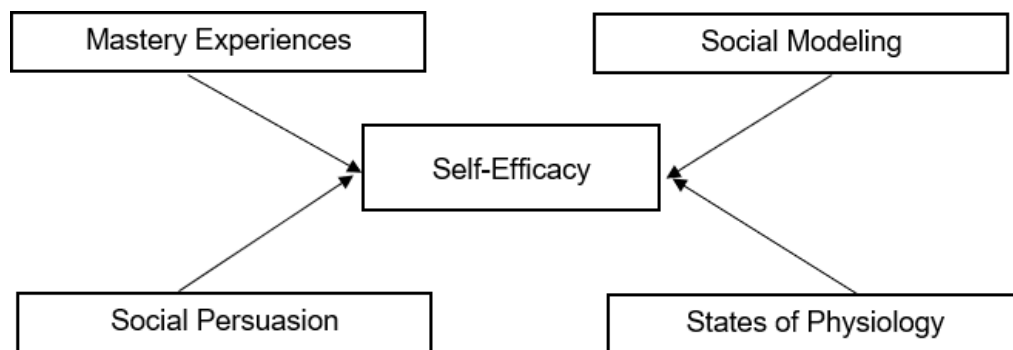
Synthesis

The literature presented had substantially explained the voyages of the required competencies of nurses imparted in knowledge and attitude for the effective caring and management of patients with heart failure being it a debilitating and long-term cardiac illness. The substance and perspective of delivery of later predicament of discharge teaching must be carried out as patient-focused, depending on the clinical presentations observed per patient. This is propelled by the fact that the information shared during the course of care will serve as backbone or basis of practice for patient in caring himself/herself while being sent at home in a later time. This research study, therefore, viewed such importance in the course of caring for patients diagnosed with heart failure and aimed to tackle its efficiency in terms of perspective and substance by the healthcare professional. With the literature published describing the importance of sustaining the knowledge and attitude of nurses in regards with heart failure, there is also a significant effect on the how the patients will carry out these teachings on themselves as to mention the disease is debilitating and long-term. Hence, by way of focusing with the appropriate competencies of nurses, holding the premier role in health education to patients, this is the initial key on assessing the delivery of nursing care as well as addressing the gaps through several trainings that includes the enrollment to an educational program. So as to include, there are also findings that collaborate the deficiency in knowledge of nurses particularly in medications and

symptoms monitoring in heart failure, which further evidently has an impact also to their emotional stance or attitude in caring for such patients. These gaps have realized to have valuable results on patient outcomes pertaining also to their relative knowledge and its retention as well as capabilities of undertaking self-care behaviors. Nurses' ability to care is apparently tantamount to what they know about the disease and how they presented themselves while carrying out the care. Therefore, the evidence-based utilization of educational program has been one of the eyed solutions to the certain gap in nursing care delivery, which also presented promising remarks with improvement in the two aforementioned competencies.

Theoretical Framework

Figure 1. Albert Bandura's Self-Efficacy Theory



Albert Bandura has defined Self-Efficacy as “one’s ability to influence events that effect one’s life and control over the way these events were experienced”. He further believed that self-efficacy is not a trait, and therefore, everyone has this ability to practice and strengthened their self-efficacy regardless of their environment. According to him, this will be achieved through these four (4) ways of building the skill in self-efficacy: mastery experiences, social modeling, social persuasion and states of physiology (Buchanan, 2016), which were essential also in strengthening the

competency of nurses in terms of knowledge and attitude in serving managing patients with heart failure.

Firstly, a mastery was attained through having dedicated efforts and experimenting realistic but at the same time, challenging goals. Bandura has once said, “easy success with little effort can lead us to expect rapid results which can in turn make us easily discouraged by failure”. In this research study, with the observance on admission rates relating to heart failure cases, this has served as a measure for reviewing the factors causing for it. One of each measure is to assess the current ability of nurses as observed in their knowledge and attitude that were necessitated in guiding the patient in the continuation process of medical management leading to their road of recovery and wellness. The pursuit of health teaching during the patient’s course of hospitalization contained sharing of information where the patient recognizes the need to introduces himself/herself to the care on its own. The firsthand experience of nurses caring patients with heart failure was attained through learning every detail of the disease process, symptomatology, treatment and medical management needed to be administered crucially, which therefore collectively molded their intellectual capability or knowledge. Indeed, it was necessary that mastery must take place systematically which contains clinical experience, didactics, problem solving and clinical eye. It is when the nurses welcomed himself/herself through the learning process achieved through bedside care to patients with heart failure acting with planning and provision of care, managing symptoms, administration of treatment and preparing them for continuity of care at home, which then yield a honing scheme in improving their knowledge. Mastery on the disease management can be attained when initially started (Goodman et al., 2013), most importantly on the 1st day of

patient's encounter and until discharge where everyday care of this patient will then evoke consistency to gather knowledge and attitude of nurses to its full potential.

Secondly, Social Modeling refers to the selection of role-models of self-efficacy, achieved through the use of internet and other digital resources that shows the lives of many inspiring models. The previous research studies that measured the effectiveness of a certain educational program could attribute a much significant application of this practice and take in every evidence-based information in the pursuit of caring of patients with heart failure. Whereas continuing education and in-service trainings must be conducted routinely as this updated the nurses on a certain scope of nursing practice and equipped them more confidently in doing their nursing care efficiently and taken as evidence based. In the professional nursing, an in-service educational program has been evident with its positive outcomes on increasing the necessary competency of nurses with up-to-date clinical information, evidenced-based practices and holistic management for the effective upbringing of the patients into full recuperation and later on wellness.

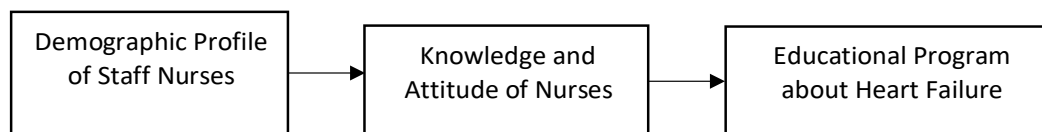
Thirdly, social persuasion described the process of finding the right mentor who has the capacity to influence one's self-efficacy through opportunities for mastery experiences. Bandura (2008) emphasized the need to look for a mentor who possessed the qualities of being knowledgeable and positive attitude in communicating with patients. By this, the function of a healthcare professional was recognized with their responsibility to guide every patient with heart failure in their steps to an improved living with controlled symptoms and lessened adverse reactions in co-morbidity state. These healthcare professionals, primarily nurses bestowed in uplifting cooperation of every patient to comply with the treatment and management with confidence and motivation, outside the hospital setting. This circumstance was

attained through direct nurse-to-patient interaction, health teaching sessions and medication administration education all happened during patient's hospitalization. On the other hand, a team-based approach in self-care management in heart failure promotes collaboration between the respective departments. For example, a physician who has an update in the symptom-based management for heart failure would teach the nurses with its practice, and later on also be applied by the nurses in caring for patients.

Lastly, states of physiology enclosed in emotions, moods and physical states influenced one's interpretation of self-efficacy. Attitude of nurses towards giving the effective delivery care is the significant focus. Emotional, physical and psychosocial state of a person do affect their ability to carry out practices in managing their disease consistently and effectively as it determined their level of motivation, satisfaction and strength. It was important to address this with utter importance so that competency of nurses especially in heart failure would not be at stake, as this influenced their effective upbringing as bedside clinical nurses and later as an advocate to their patients. More so, physiological and environmental factors affecting the nurses weighed an importance in capturing how well they be able to practice as gathered by their intellectual formation and behavioral practices towards the managing the disease, heart failure.

Conceptual Framework

Figure 2. Conceptual Framework of the Research Study



The figure illustrates the effect of a nursing education program for heart failure and its management with consideration on the time of administration to the level of knowledge and attitude of nurses who have cared for these diagnosed patients. In order to achieve this measure, assessment of the demographic characteristics of nurses in terms of age, gender, area of assignment, years of experience in the area and in the institution, attainment of educational degree, and no. of patients with heart failure they have cared in a month, was initially undertaken with an aim if these had a relative influence on their ability as a professional nurse. This process of studying their internal features (demographic profiles) was drawn to systematically explained the external features (knowledge and attitude) nurses have shared to their heart failure patients during the course of hospitalization.

Meanwhile, measurement of the competencies of nurses intellectually and behaviorally was to yield a baseline extent which was critical in differentiating its status and comparing its trends before and after the administration of educational program. With the effectiveness premised from the said program, it could result in either improving, sustaining or decreasing the level of the two essential competencies of nurses.

Whereas Garris (2014) previously concluded in her study that there was an increased knowledge on nurses after they have been provided with education classes on heart failure. In this aspect, the education program has served as a support for nurses in terms of enriching their baseline knowledge and develop a positive attitude towards their teaching role in heart failure. Their knowledge is also will be the knowledge of their patients. Nonetheless, Garris (2014) also emphasized the need of reinforcement and follow-up of this sort of education program for nurses since it is viewed to have a potential in a more effective teaching and improved health outcomes

for the patients. Therefore, the three (3) factors of the study shared the same impression of describing the characteristics of nurses as thoroughly described and elucidated in this paper.

Operational Definition

Assessment - pertains to the clinical presentation, signs and symptoms and diagnostic data that are observed in patients with heart failure upon examination during hospitalization, in which nurses must be knowledgeable about.

Attitude - describes one of the nursing competencies that emphasizes the emotional response of a nurse in times of caring as well as teaching patients who are to be discharged with heart failure.

Diagnosis - defines the pathophysiologic process of heart failure that explains the causes of its signs and symptoms which nurses must learned of to be able to teach to their patients in a manner thoroughly explained.

Educational Program - pertains to the nursing program, a close discussion with staff nurses about the principles of heart failure tailored through nursing process of assessment, diagnosis, planning, intervention and evaluation. This also emphasizes the concepts and guidelines on what to teach heart failure patients about independent care when being sent home.

Effects - terms to specify the expected end result of one circumstance to the intended beneficiary. In this study, it defines the outcome of rendering an educational program for staff nurses assigned in medical units.

Evaluation - pertains to the observations every after the patient received nursing care and management during the course of hospitalization, as well as measure its effectiveness than can be subjected for planning actions to address them.

Heart Failure - a debilitating cardiac disease which is caused either by structural or functional impairments that later results to diminished pumping ability and delivered blood throughout the body. This is a long-term disease in which diagnosed patients requires intensive management and care.

Intervention - pertains to the nursing actions indicated for heart failure that are required to be delivered to patients and explain them its rationale accordingly.

Knowledge - describes the nursing competency of understanding significant concepts and information with critical thinking and clinical decision making, particularly on dealing with heart failure as a disease that affects patients as well as with their family and surrounding community in a later time of being discharged.

Planning - defines the nurses' job to address the patients' needs in order to attain state of symptom management to full recuperation by way of studying their health status to be accorded by appropriate management ahead of its undertaking.

Staff Nurses - describes the population of nurses assigned in medical units wherein caring mostly patients with heart failure. This highlights the necessary competencies that they must be equipped with in order to carry out nursing roles and responsibilities towards these patients effectively.

Research Hypotheses

There was no difference in knowledge of nurses pertaining heart failure before and after the educational program.

There was no difference in attitude of nurses towards heart failure before and after the educational program.

There was no relationship between knowledge and attitude of nurses regarding heart failure principles.

CHAPTER 3

RESEARCH METHODOLOGY

RESEARCH DESIGN

This research study was a quantitative, quasi-experimental, one-group type of research design. This was a quantitative research design that used numerical data to observe a certain phenomenon and thereafter measured the relationship between the variables presented. Wherein, level of knowledge and attitude about heart failure care principles were measured with the use of Likert scale. The difference of these two (2) variables based on the administration of an education program either before or after was measured using various statistical treatments. Generally, it was a quantitative type of research as this study contained numerical data in determining the nature or causes within the specified variable with utilization of Likert scales in measuring level of knowledge and attitude on heart failure using respective assessment tools. It was also a quasi-experimental study because it involved a one group pre-test-post-test design as level of knowledge and skill was identified during the two (2) specified circumstances: prior to attending a nursing education program and after attending such. The time variations were important to weigh since it has the nurses be enrolled with supplemental education on heart failure care and management that their baseline knowledge and attitude were compared then.

Sampling Technique

The study utilized a purposive sampling technique wherein all staff nurses assigned in Intensive Care Unit, Medicine Ward and Geriatric Ward of Ospital ng Makati will be enrolled in the study. These nurses have significant experience on caring mostly on cardiovascular patients which admitting diagnosis of Heart Failure was a part of their admission census managed by Internal Medicine service.

Nevertheless, they were exposed on the particular needs and management of patients with Heart Failure with various symptoms. As an aid for the determination of sample size of this study, total number of assigned nurses in the mentioned three wards and unit were taken officially from the Unit Manager of the respective areas:

Table 2. No. of staff nurses in Medical units

	<i>Intensive Care Unit</i>	<i>Medicine Ward</i>	<i>Geriatric Ward</i>	<i>Total</i>
Staff Nurses	22	17	6	45

All of these nurses were subjected as participants of the study which were scrutinized further based on inclusion criteria and exclusion criteria in choosing the sample. Inclusion criteria are as follows: a) staff nurses assigned in Medicine Ward, Geriatric Ward and Intensive Care Unit, b) no pending resignation from the nursing service on the month of research undertaking, c) staff nurses who were assigned in the department at least 6 months and up. Exclusion criteria are: a) staff nurses who were in vacation leave or sick leave, b) who were appointed as unit managers and charge nurses as there were significant indifferences on the competencies accorded by positions and ranks.

In an aim to get the staff nurses assigned in three medical units, sample size was determined as 30 respondents to draw up significant results in this study. This was in accordance on the Sanad's study about determining the differences on knowledge scores, with the confidence interval of 95% and standard deviation of 10.0 as well as with 10% to account for a non-response rate (Sanad, 2017). However, since the population was deemed as 40, the standard deviation of 3.0 was very low and therefore was adjusted accordingly to 10.0. In the event that the respondent has not completed fully the 3 phases of data collection, the said respondent was considered

as missing, hence previously submitted data was considered as unused or null and was not part in the final data gathered.

Research Setting

The setting of this study was the medical areas of Ospital ng Makati. Primarily, the study was taken place in Intensive Care Unit, Medicine Ward and Geriatric Ward. The eligible subjects of the study were determined per criterion above and identified based on staffing assignment to these three (3) areas. In Intensive Care Unit, it has a 30-bed capacity where caters patients needed an intensive monitoring 24/7 under general services (Internal Medicine, Surgery, Obstetrics and Gynecology and Ophthalmology and ENT), wherein, cardiovascular cases such as Heart Failure were included in the overall patient census. Patients who were deemed as moderately critical were admitted in either Medicine Ward with 30-bed capacity (12 for female, 7 for male, 2 for isolation, 8 for cohort area), and Geriatric Ward with 20-bed capacity (8 for female, 10 for male and 2 for isolation). These two wards also served patients who were for continuity of care as they could be transferred directly from Intensive Care Unit. These three (3) specified areas were highly accommodated Internal Medicine cases and had managed various cardiovascular cases. Hence, nurses assigned in these areas has been exposed in caring for patients with Heart Failure and been to discharging patients as well.

Research Instrument

There were various steps that needed to be taken systematically in order to attain needed information up for attaining the general objective of the study. Prior to data collection process, the researcher had developed and completed necessary tools and materials needed such as Instructional Design, Consent and Invitational Forms, Program Schedule, Microsoft PowerPoint presentations, Study Tools (Demographic,

Nurses' Attitude Scale by Hala Mohamed Sanad and *Nurses Knowledge on the Management of Heart Failure Questionnaire* by Mohammed Hakim Sharan Al-Hchaim and Rajha Abdul Hassan Hamza). Proper communication through electronic mail to the original authors of the aforementioned tool questionnaires were performed to seek approval for the adaptation of these instruments to this research study.

In this study, there were three (3) major tools to be administered per the specified phases: pre-teaching, teaching and post teaching. First, the demographic tool included personal information and work-related information of the respondents. This tool has initially described the profile of the respondents and assures credibility in terms of work-related information. Second, the "*Nurses' Knowledge on Heart Failure Management Questionnaire*" originally authored by Al-Hchaim & Hamza in 2016, a 40-item multiple choice questionnaire that contained relevant points discussed in the educational program that was administered to the respondents on this study during the pre-teaching and post-teaching phase, intended to measure the level of knowledge prior and after the education program. Third, "*Nurses' Attitude Scale (towards management of patients with Heart Failure)*" written by Hala Mohamed Sanad in 2017. It has a 5-point Likert scale focusing on the attitude scale which has a coefficient alpha score of 0.798 for its internal reliability (Sanad, 2017). This tool was adapted and modified depending on the items appropriate in Philippine healthcare setting, as this was administered also on the pre-teaching and post-teaching phase of the study. Also, items #6 and #10 in the original tool were modified in terms of "*Cardiac Care Units*" and replaced with the term "*medical units*" as the institution has a general ICU and not only specified for cardiac cases. Generally, these two tools have taken approval with proper communication with its original authors via electronic mails identified on the journal database website where it was originally published.

Data Gathering Procedure

Initially, determining of general population was taken place, accounted through purposive sampling technique. Communication with the eligible participants occurred with a substantial oral explanation about the research tool and its indications that will happen during the three (3) specified time (Pre-teaching, Teaching and Post-Teaching) with the need to complete answering the tool per specified time. A signed consent was secured from the nurses to ensure volunteerism to participate and understanding of their right to refuse or withdraw in any time of data collection. Pilot testing commenced for 10 nurses (respondents) who were selected randomly through fishbowl technique that aided in determining the quantity of nurses to be selected in each area. In this case, selected nurses have answered the three specified tools that were sorted and measured its internal reliability using Cronbach Alpha.

Pre-teaching phase took place 1-2 weeks prior to the formal start of the education program with obtained consent. The aforementioned pre-teaching tools was administered in their respective areas, secured in a folder. Each nurse was advised to write the tags for their area of assignment (I-Intensive Care Unit, M-Medicine Ward, G-Geriatric Ward, time of research study (01-pre-teaching, 02-post-teaching) and name initials on the right upper corner of the tool as for example: ,I_01_ZCS. This facilitated smooth data collation of the research tools, as well as measure their baseline level of knowledge and attitude in heart failure management and most especially, determined the no. of attendees of educational program stipulated from those who finished the 1st phase.

The nursing education program took place at the conference rooms and respective area huddle room within said hospital, which has occurred for a maximum of 60 minutes per session. The researcher ensured comfort and privacy throughout

the session and provided appropriate educational materials (Microsoft PowerPoint presentation, pencil and paper) and food for the attendees. The session of educational program for each unit was arranged on the day of their monthly meeting, wherein 1 hour was allotted before the meeting for the researcher to conduct the said discussion. This has facilitated their attendance as it was duly approved by the Nursing Division. And yet, their enrollment to the program was based on their completed pre-teaching tools wherein nurses were given an invitational form stipulating the objectives of the program. After the program, the research tool (*Nurses' Knowledge of Heart Failure Education Principles Survey*) was administered right after the program (similar to Al-Hchaim & Hamza, Sanad and Garris work) as each nurse will be again advised to write the tags on the right upper corner of the paper, alike on they have written on the pre-discharge tools. This was required to be completed in 30 minutes and was checked and huddled afterwards. This has yielded an immediate feedback and address the key points that were not understood by the attendees so as to generate re learning process (International Training and Education Center for Health, 2008).

Post-teaching tool administration was done 1-2 weeks after being attended the nursing education program. The researcher visited each nurse in the respective areas of assignment to facilitate administration of the post-teaching tools (*Nurses Knowledge on the Management of Heart Failure Questionnaire and Nurses' Attitude Scale in Heart Failure Management*) enclosed in a folder. The time undertaking was deemed as appropriate since they were given ample time to be exposed in caring for Heart failure patients after being enrolled and taught with the principles of management of heart failure; as well as gauging their attitudes towards these patients after having undergone the program. This also alleviated the sensitization of post-test scores and also minimized the probability of threats to internal reliability of the study in terms of

history and maturation (Ohlund & Yu, n.d.) respective to the time of administration being alike on the administration of pre- and post-test.

Intervention Protocol

The education intervention was utilized in this study further referred as education program which primarily aimed to educate the nurses in ICU, Medicine and Geriatric wards about heart failure with principles of self-care through discharge teaching. This 60-min education program occurred for 3 sessions conducted at the conference room and area huddle room within the vicinity of the said hospital. The development of this education program was based on the inclusions of the templated Instructional Design formulated by the Philippine Regulatory Commission for Continuing Professional Development programs for nurses. The formal instructional designed developed for this study was attached in the appendix section of this paper. The concepts/contents of the program were systematically presented based on the nursing process: Assessment, Diagnosis, Planning, Intervention and Evaluation (ADPIE) about the key concepts in heart failure nursing care, which is formally described as follows:

Table 3. Instructional Design of research study

Contents/Concepts	Time Frame	Teaching Strategy
1. Assessment in Heart Failure • Definition • Morbidity Cases • Clinical • Presentations/Symptomatology	10 mins	PowerPoint presentation
2. Diagnosis in Heart Failure • Identification of Patients • Staging/Classification • Nursing Problems	10 mins	PowerPoint presentation, tables/graphs
3. Planning in Heart Failure: Discharge Criteria	5 mins	PowerPoint presentation

4. Intervention in Heart Failure: Discharge Instructions in Heart Failure management (Joint Commission Guidelines)	25 mins	PowerPoint presentation, research article
5. Evaluation in Heart Failure: "Teach Back Technique" Strategies	5 mins	Video presentation, research article
Open Forum	5 mins	

After the program, post-teaching tool was administered in view to measure the level of knowledge. Nevertheless, personal message was sent to each respondent days prior to ensure attendance.

Plan for Data Analysis

Finally, data was sorted and treated statistically wherein significant values was taken up in the generalization as findings of the study. In some circumstances, reliability and validity issues were addressed by: a) ensured all items were applicable in public healthcare setting through removing inappropriate items, reviewing the tools and have it proofread by the qualified biostatistician, b) all items measured by quantification through scales, or including choices that could be itemized, c) ensured all items describe the variables presented, and excluded the items that may arise and conclude these issues, d) shorter time period between the educational program and administration of post-teaching tool to minimize the threat to history, e) alleviated the risk of expected mortality among the respondents in a 4-weeks period since there is a chance of resignation of nurses from their position from time to time.

Nevertheless, reliability test using Cronbach Alpha was measured initially using the attitude scale in the tool (since the tool regarding the nurse's knowledge is a multiple-choice type of question), prior to final administration of research tool, which score gained was 0.742. This was the initial step in administering research tool after

establishing verification and approval by the respective research adviser considering the Cronbach Alpha score.

Table 4. Statistical treatments used in the study

Objectives of the Research	Tools to be Used	Variables to be Measured	Statistical Treatments
1. To determine the level of knowledge of nurses prior and after administration of educational program about Heart Failure management principles.	<i>Questionnaire on Nurses' Knowledge on Management of Heart Failure</i> by Al-Hchaim & Hamza (2016) Adapted	Ordinal Data Multiple-Choice Scores	Frequency Distribution, Mean
2. To determine the attitude of nurses in discharge teaching heart failure management prior and after administration of in-service education.	<i>"Scale of Nurses' Attitude towards management of patients with Heart Failure"</i> by Hala Mohamed Sanad (2017) Adapted	Interval Data 5-point Likert scale	Mean
3. To determine the difference of the level of knowledge of nurses regarding heart failure management principles during the pre- and post-teaching administration.	<i>Questionnaire on Nurses' Knowledge on Management of Heart Failure</i> by Al-Hchaim & Hamza (2016) Adapted	Ordinal Data Multiple-Choice	Paired t-test Mean Score
4. To determine the difference of the level of attitude of nurses regarding discharge teaching on heart failure management during the pre- and post-teaching administration.	<i>"Scale of Nurses' Attitude towards management of patients with Heart Failure"</i> by Hala Mohamed Sanad (2017) Adapted	Interval Data 5- point Likert scale	Mean
5. To determine the relationship of demographic characteristics of respondents to their level of knowledge and attitude.	<i>Questionnaire on Nurses' Knowledge on Management of Heart Failure</i> by Al-Hchaim & Hamza (2016) Adapted <i>Scale of Nurses' Attitude towards management of patients with Heart Failure"</i> by Hala Mohamed Sanad (2017) Adapted	Interval Data	Chi-square
6. To determine the relationship between the level of knowledge and attitude of nurses on heart failure management during discharge teaching	<i>Questionnaire on Nurses' Knowledge on Management of Heart Failure</i> by Al-Hchaim & Hamza (2016) Adapted <i>"Scale of Nurses' Attitude towards management of patients with Heart Failure"</i> by Hala Mohamed Sanad (2017) Adapted	Interval Data	Pearson r Correlation Test

Since this was a quantitative research design, the objectives of the study were measured and treated according with the use of different statistical treatments. To properly manage the data sets and calculate the quantifiable data sets, analytical tool such as IBM SPSS (Statistical Package for the Social Sciences) was used. Microsoft Excel has also utilized as an aid in encoding such information. In SPSS, statistical treatments were applied, and findings (p values and all) helped in attaining significant differences from the variables lifted from the rejection and accepted the null hypotheses based on the values.

Data Management

Respective names of the respondents were tagged with their initials written in the questionnaire along with corresponding identifiers in the 3 phases of data collection. This was stored in a folder and afterwards was encoded in the investigator's personal laptop secured with a password that is to be saved in a duration of one year. Also, this study imposed to have a direct benefit on the respondents particularly as staff nurses have personal experience on the education program with an impact on their level of knowledge and attitude but has not resulted in any risks or harm towards them.

Meanwhile, the research study was obtained using the purposive sampling technique with assigned nurses at Intensive Care Unit, Medicine Ward and Geriatric Ward, process of completion of thesis has run as follows:

Table 5. Work plan schedule of research study

Task	Date
1. Submission of revised research proposal to UP Open University's Ethics Review Board	December 2018
2. Approval of Research Proposal by UPOU ERB	April 2019
3. Defense on Thesis Proposal	September 2019

4. Formulation of Chapters I-III	September 2019
5. Notifying the principal authors of the following: <i>“Nurses’ Knowledge and Attitude towards management of patients with Heart Failure”</i> and <i>“Nurses Knowledge of Heart Failure Education Principles Survey”</i> and seeking approval for the formal adaptation of the tool/questionnaire used	September 2019
Finalization of Research Instruments	September 2019
6. Submission of final thesis proposal to UPOU Thesis Adviser	October 2019
7. Submission of final thesis proposal to Ospital ng Makati’s Research and Development Innovation Office / Nursing Division	December 2019
8. Procured approval	January 2020
9. Submission of final thesis proposal to Ospital ng Makati’s Research Ethics Board	January 2020
10. Procured approval	January 2020
11. Start of Data Gathering Process; Coordinating with OsMak Nursing Division and Unit Managers of ICU, Medicine Ward and Geriatric Ward	January 2020
12. Identification of Eligible Nurses (Respondents) for Pilot Study; Obtaining signed consent from the respondents	January 2020
13. Coordinating with Unit Managers of three areas regarding scheduling of education program (20 nurses each per session, a total of 3 sessions to accommodate the overall nurses assigned in these areas). In each session: • <u>Pre-teaching</u>: respective wards • <u>Teaching</u>: Conference Room • <u>Post-teaching</u>: Conference Room and respective wards	January 2020
14. Pilot Study; Calculating for Internal Reliability	January 2020
15. Administration of final research tool (Demographic Tool and Discharge Teaching Tool) for eligible: • <u>Pre-Teaching</u>: 1-2 weeks prior to possible education program date; respective wards (Tools: Demographic, <i>Nurses’ Attitude Scale</i> by Hala Mohamed Sanad and <i>Nurses Knowledge of Heart Failure Management Questionnaire</i> by Al-Hchaim & Hamza) • <u>Teaching</u>: Conference rooms/Huddle room (Tool: Heart Failure Discharge Teaching Instructional Design) • <u>Post-Teaching</u>: 1-2 weeks after the program; conference room and respective wards (Tools: Demographic, <i>Nurses’ Attitude Scale</i> by Hala Mohamed Sanad and <i>Nurses Knowledge of Heart Failure Management Questionnaire</i> by Al-Hchaim & Hamza)	February 2020
16. Collation of administrated research tool; Encoding and calculation of data thru Microsoft Excel/IBM SPSS	March 2020
17. Formulation of Chapters IV-V; Analyzing findings; Summarizing with tables and graphs; Drawing conclusions	March-May 2020
18. Defense on final thesis paper; Communicating research findings	May 2020

Ethical Considerations

Generally, the author has fully checked the research study per se in terms of possible ethical issues that may arise during its full implementation, and thus must be fully addressed and find ways to prevent such misalignment on ethical principles. It was a responsibility of safeguarding respondents' rights (privacy, confidentiality, safety from hazards of implementation). Consent was drafted based on the language that was easily understood by the prospected respondents and was voluntarily obtained from them personally. Prior to that, approval from the UPOU Ethics Review Board was obtained through submission of research plan, letter of permission, and arranging personal meetings to discuss research objectives, wherein the final notification was appended in this proposal. Subsequently, approval from the hospital's Research Development Innovation Office and Nursing Service's Research Committee regarding ethics review for the study was sought also. In this case, ethical issues were considered in this research understanding: a) disclosing of information that could embed problems of understaffing, b) discomfort on sharing experiences about their knowledge and skills in discharge that could mistakenly tagged as direct measurement of their competency per se. Hence, proper communication to the respondents about the objectives intended from the study was duly imposed and confidentiality was emphasized throughout the administration. Common understanding and volunteer involvement were essential in considering ethics in this research undertaking.

CHAPTER 4

RESULTS AND DISCUSSIONS

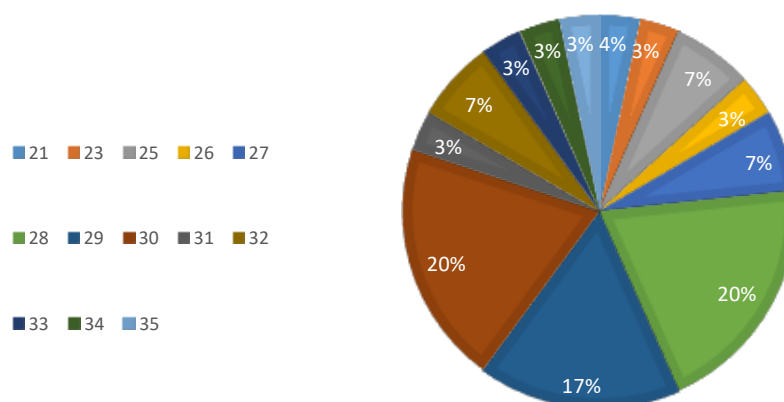
A. Demographic Profile

Table 6. No. of respondents of the study

Area	General Population (Staff Nurses)	Excluded	Total
Intensive Care Unit	22	3 (1 – on rendering vacation, 2 – on vacation leave)	19 nurses
Medicine Ward	17	11 (6 – on 3-4 months of experience, 2 – on vacation leave, 2 – on rendering period, 1 – on maternity leave)	6 nurses
Geriatric Ward	6	1 (on vacation leave)	5 nurses

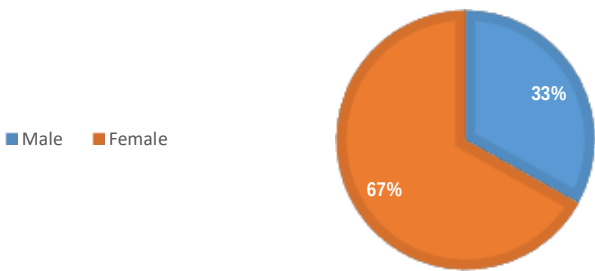
Generally, the subjects of this study include the nurses assigned in 3 specified areas: Intensive Care Unit, Medicine Ward and Geriatric Ward. With the observance of exclusion and inclusion criteria, the total number of respondents demonstrated above. Hence, a total number of 30 respondents are identified under purposive sampling and undergone completion of pre-teaching and post-teaching phases of the study.

Figure 3. Age variations of respondents



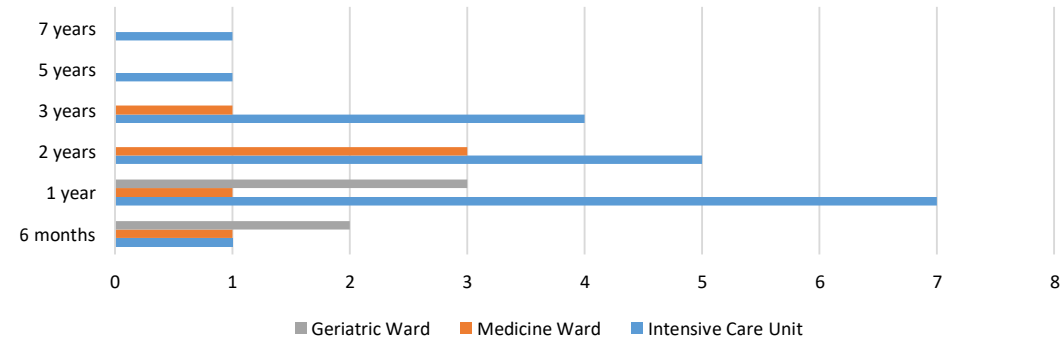
The respondents belonged to adulthood stage comprising of nurses from 21 to 35 years old. Most of the nurses age 28 and 30 years old encompassing the 40% of the population. Among them, 21 years old is the enlisted youngest age, comprising the least number of the respondents at 3%.

Figure 4. Gender variations of respondents



Most of the respondents were dominated by female nurses at 67%, whilst male ones only fall at 33% of the population.

Figure 5. Years of experience of staff nurses assigned in each area

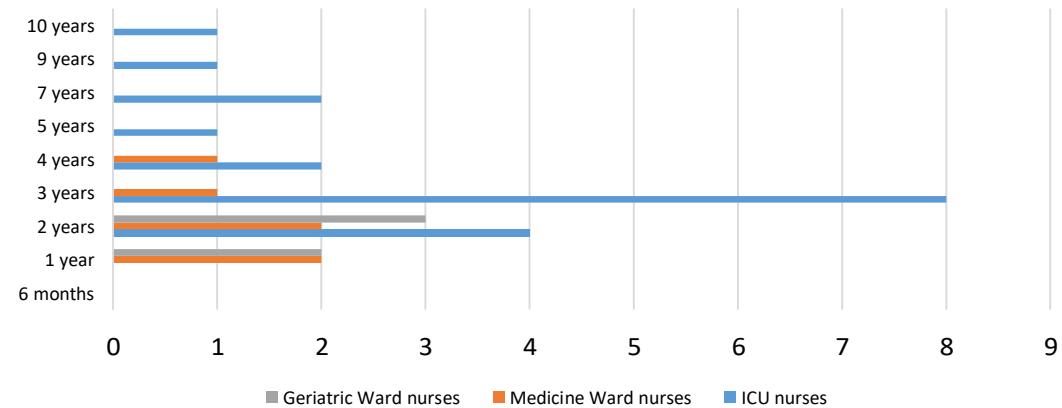


Years of experience upon being assigned to respective area were determined through the status of the certain staff nurse having formally appointed and has stayed for a period of time. Most of the ICU nurses were on the 1st year of assignment, whereas there were still nurses who were in the novice period of 6 months. Meanwhile, among the other two areas, nurses in ICU have the longest period of time between 5-7 years in the area which could recognize their expertise in critical care. Nurses in Geriatric

Ward were only assigned there anew for about 6 months to 1 year of experience which could substantiated that ward nurses were being trained for a significant time and later promoted to a special area relative like ICU where they were being trained further and specialized their competencies for longer years.

On the other hand, most of the Medicine Ward nurses have a much lengthier experience of 2-3 years compared to Geriatric Ward nurses. Relatively, to date, a certain staff nurse must gain significant experience in the ward initially before having appointed to special areas like Intensive Care Unit to have an ample time to adjust in working environment, to hone critical competencies in clinical care necessitated in handing complex medical cases, according to the head of training committee of Nursing Division, Ms. Ma. Perpetua Reyeg, RN. Wards have been the training ground for staff nurses prior to stabilizing career in specialized units.

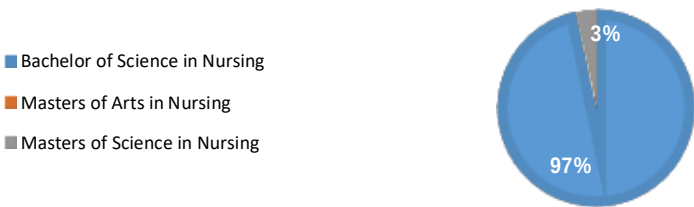
Figure 6. Years of experience of staff nurses in the hospital



In this case, no. of years of experience for all the staff nurses were deemed as they were formally hired by the institution with relative job description and duties and responsibilities regardless of ward assignment. Specifically, ICU nurses have worked extensive years compared of ward nurses, with the earliest time of two years and longest time of 10 years. This explained the notion that specialty care nurses like in

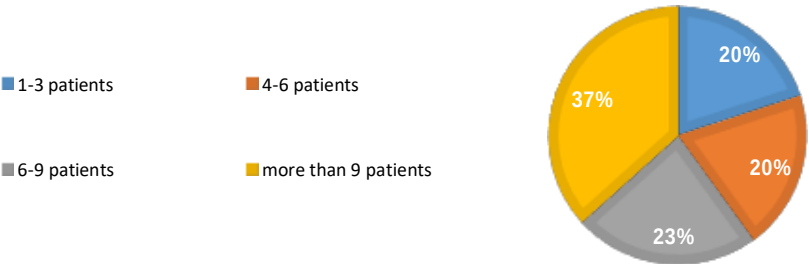
the field of intensive or critical care were senior nurses compared of those in the ward. This predicament of having ICU nurses employed longer in the institution compare to Medicine and Geriatric Ward nurses having one to four years of experience (at the time of writing), explained that early years of their professional career were occurred in the wards before having appointed to several special areas such as ICU. Their duration of working in the hospital yielded their competency of handling challenging medical cases as well as advancement in career status. This was relevant why a staff nurse in ward is comparatively young in experience compare to ICU nurses.

Figure 7. Educational attainment of respondents



A major proportion of staff nurses were basically had a degree in Bachelor of Science of Nursing as their premier academic standing. On the contrary, only 1% of the population has managed to pursue post graduate course in Master of Science of Nursing, which could expound their personal motivation in studying again simultaneous with harnessing the path of practicing professional nurse.

Figure 8. No. of patients with heart failure in a month as cared by nurses



Thirty-seven (37%) of staff nurses reported that they have experienced caring more than 9 patients with heart failure during a 4-week period. This was essential also in determining patients diagnosed with heart failure admitted in the respective medical units of the institution. About 23% of nurses stated that they only cared around 6-9 patients in a month, while the remaining 40% nurses were halved in terms of their personal reports of having only assumed caring for only small population ranging from 1 to 6 heart failure patients admitted in the hospital. These personal accounts had a relative impact on their expertise in terms of competencies they acquired during the experience of caring for a certain heart failure patient through a direct nursing encounter.

B. Knowledge in Heart Failure

Table 7. Frequency distribution of ICU respondents' answers in the knowledge scale during pre-teaching and post-teaching phases

Questions		Answer Variations								% correct answers ICU nurses (N=19)	
		A		B		C		D		Pre (01)	Post (02)
		01	02	01	02	01	02	01	02		
Assessment											
1	Heart is a muscular organ with four cavities which located in (C. <i>central area between the lungs</i>)	2	1	0	0	<u>8</u>	<u>12</u>	9	6	42%	63%
2	Muscular wall of the heart has three layers. And the inner layer of the heart called (A. <i>Endocardium</i>)	<u>15</u>	<u>16</u>	1	0	0	0	3	3	79%	84%
3	The heart consists of four chambers and is the strongest chamber in the heart (A. <i>Right atrium</i>)	2	4	1	1	2	3	<u>14</u>	<u>11</u>	74%	58%
4	The heart receive blood through the coronary arteries, which in turn get the blood through (B. <i>Aortic artery</i>)	6	5	<u>7</u>	<u>12</u>	4	0	2	2	37%	63%
5	The real size of heart stroke could be measured by which of the following formula (A. <i>The difference between the End Diastolic Volume and the remaining amount of blood in the ventricle size</i>)	<u>3</u>	<u>9</u>	6	5	1	3	9	2	16%	47%
6	Heart beat generated by (B. <i>SA node</i>)	3	2	<u>15</u>	<u>14</u>	1	2	0	1	79%	74%
7	Multiplying heart rate in stroke volume represents (C. <i>Cardiac Output</i>)	3	6	0	2	<u>13</u>	<u>10</u>	3	1	68%	53%
8	The bicuspid and tricuspid valve are (C. <i>Atrioventricular valves</i>)	0	1	0	2	<u>13</u>	<u>10</u>	6	6	68%	53%
9	Aortic artery arch sent blood directly to (B. <i>The main left coronary artery</i>)	3	3	<u>11</u>	<u>11</u>	0	0	5	5	58%	58%
10	The sac membrane that surround the heart is called (B. <i>Pericardium membrane</i>)	0	1	<u>19</u>	<u>17</u>	0	1	0	0	100%	90%
11	Pericardial sac membrane composed of (B. <i>Two layers</i>)	1	1	<u>10</u>	<u>13</u>	8	4	0	1	53%	69%

12	A group of cells in the upper part of the right atrium, natural origin normal electrical impulse (A. <i>Sinoatrial node</i>)	<u>11</u>	<u>17</u>	0	0	3	0	5	2	58%	90%
13	The normal rate of heart beating is (____) times / minute (D. 60)	1	0	6	5	5	5	<u>7</u>	<u>9</u>	37%	47%
Planning											
14	The preparing the discharge plan by thenurse consider (A. <i>Appropriate</i>)	<u>12</u>	<u>16</u>	2	1	2	0	3	2	63%	84%
15	The normal rate of sinoatrial node in adult is (____) beat / minute (D. 60-100)	4	2	1	1	7	2	<u>7</u>	<u>14</u>	37%	75%
16	The rate of beats in the atrioventricular node is (____) beat / minute (A. 40-60)	<u>6</u>	<u>14</u>	1	0	2	0	10	5	32%	74%
Diagnosis											
17	Intellectual or mental stress, tobacco, coffee and alcohol lead to (____) heart rate (C. <i>Acceleration</i>)	1	0	0	0	<u>14</u>	<u>12</u>	4	7	74%	63%
18	One of the causes of heart failure is (C. <i>Myocardial Infarction</i>)	0	0	0	0	<u>19</u>	<u>19</u>	0	0	100%	100%
19	The one of the risk factors that leading to heart failure is (A. <i>Smoking and alcohol</i>)	<u>19</u>	<u>19</u>	0	0	0	0	0	0	100%	100%
20	It is considered from the common signs and symptoms of heart failure (A. <i>Nausea and cough</i>)	<u>5</u>	<u>8</u>	0	0	2	3	12	8	26%	42%
21	Reduction of renal perfusion due to heart failure leads to the release of (____) hormone by the kidneys (C. <i>Renin</i>)	0	0	0	1	<u>14</u>	<u>15</u>	5	3	74%	79%
22	It is considered as one of the complications of heart failure (B. <i>Kidney failure</i>)	1	0	<u>14</u>	<u>18</u>	1	0	2	1	74%	95%
Intervention											
23	Patient with heart failure will be advised with (D. <i>Perform exercise for short intervals</i>)	2	1	9	3	0	1	<u>8</u>	<u>15</u>	42%	79%
24	The right Position for the patient with HF is (B. <i>Raise the head side of the bed</i>)	5	4	<u>10</u>	<u>8</u>	2	5	2	2	53%	42%
25	Patient with HF is advised to (B. <i>Simple exercises gradually increased over weeks</i>)	8	2	<u>8</u>	<u>13</u>	3	3	0	1	42%	68%
26	Patient with HF is advised to (A. <i>Do not add salt and fat to foods</i>)	<u>17</u>	<u>18</u>	2	1	0	0	0	0	90%	95%
27	In case of weight gain of more than one kilogram during one day, this mean (B. <i>Heart failure become more worse</i>)	4	1	<u>13</u>	<u>14</u>	1	0	1	4	68%	74%
28	When the patient feels the start of deterioration and weakness in the leg or the lack of daily activity, then he/she must (B. <i>Report to the doctor</i>)	1	1	<u>12</u>	<u>15</u>	0	0	6	3	63%	79%
29	There is a correlation between (____) with an increased risk of myocardial infarction and sudden death (D. <i>Practicing strong physical exercise</i>)	0	1	7	7	7	3	<u>5</u>	<u>8</u>	26%	42%
30	It will be better to perform moderate intensity activity at least in most days of the week (A. <i>30 minutes</i>)	<u>12</u>	<u>16</u>	4	0	1	2	2	1	63%	84%
31	It will be preferred to perform exercise (____) times a week (C. 5)	0	1	3	0	<u>4</u>	<u>9</u>	12	9	21%	47%
32	Physical training in rehabilitation sessions must be completed within (____), with the inclusion of the warm-up and cool down sessions (A. <i>One hour</i>)	<u>10</u>	<u>11</u>	7	4	2	2	0	2	53%	58%
33	Static Isometric exercises such as weightlifting and hand loads is with (____) than aerobic exercise such as jogging, swimming for heart failure patients (A. <i>Less benefit</i>)	<u>10</u>	<u>15</u>	4	4	2	0	3	0	53%	79%
34	To prevent low blood pressure immediately after strong exercise, patient is advised (D. <i>Walking for a short time</i>)	6	4	1	1	9	9	<u>3</u>	<u>5</u>	16%	26%
35	Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is (____) for patient with heart failure from (B. <i>Advised</i>)	1	1	<u>15</u>	<u>14</u>	3	4	0	0	79%	74%
36	Patients with heart failure controlled can eat (____) of sodium per day (A. <i>Less than 2-3 grams</i>)	<u>14</u>	<u>18</u>	1	0	2	0	2	1	74%	95%
37	(____) leads to HF (C. <i>Obesity</i>)	5	9	1	0	<u>12</u>	<u>10</u>	1	0	63%	53%
38	Heart failure patients are advised to (D. <i>Postpones return to work or the main activity for some time</i>)	3	4	1	3	8	3	<u>7</u>	<u>9</u>	37%	47%

39	Heart failure patient should be (____) to use of oral medications and injections to help local erection (C. Allows for limited degree)	6	6	7	5	<u>6</u>	<u>6</u>	0	2	32%	32%
40	Patients with HF are advised to take the Diuretic medication (B. At morning)	1	3	<u>16</u>	<u>14</u>	1	0	1	2	84%	74%

Generally, the tool that was utilized to measure knowledge of respondents pertaining principles of heart failure and required discharge teaching was adopted from the work of Mohammed Hakim Shamran Al-Hchaim in 2016. Under the influence of the educational program, the tool was labeled as per the nursing process, Assessment, Diagnosis, Planning and Intervention to efficient data gathering and devising the nursing education program. The table showed the variations answers of nurses in Intensive Care Unit on the knowledge scale. It was understood that the respondents have different answers from each statement but has arrived in correct response in several statements after undergoing education program. Sixty-five or 65% of questions (27 out 40 items) have significant positive changes in scores varies, wherein 13 items were explaining the intervention or management modalities for patients with heart failure. Moreover, perfect scores were constantly attained both on two (2) phases of the study that were about the causative and risk factor of the said disease (items #18-19). On the other hand, there were also questions that has inappropriately decreased in correct scores in the post-teaching phases comprising of 10 items (25%), 5 of them were pertaining to clinical presentations or assessment of patients with heart failure. This can be recommended as a basis in formulating education program in a later time in which heart failure assessment must be more emphasized and explained.

Table 8. Frequency distribution of Medicine Ward respondents' answers in the knowledge scale during pre-teaching and post-teaching phases

Questions	AnswerVariations		% correct answers MW nurses (N=6)	
Assessment				
Heart is a muscular organ which located in (C. <i>the lungs</i>)	-	-		
Muscular wall of the heart and the inner layer of (B. <i>Endocardium</i>)	-	-		
The heart consists of four strongest chamber in (C. <i>atrium</i>)			-	-
The heart receive blood from arteries, which in turn (B. <i>Aortic artery</i>)		-	-	
The real size of heart is measured by which of (A. <i>The difference between Diastolic Volume and blood in the ventricle</i>)	-	-		
Heart beat generated by multiplying heart rate represents (C. <i>Cardiac output</i>)		-	-	
The bicuspid and tricuspid valves are (A. <i>trioventricular valve</i>)			-	-
Aortic artery arch sends blood to (B. <i>main left coronary artery</i>)		-	-	
The sac membrane that covers the heart is called (B. <i>Pericardium</i>)		-	-	
The pericardial sac membrane consists of (C. <i>two layers</i>)		-	-	
A group of cells in the atrium, natural origin of heart rhythm is (A. <i>Sinoatrial node</i>)	-	-		
The normal rate of heart beats / minute (D. <i>60</i>)			-	-
Planning				
The nurse preparing the discharge plan should consider (A. <i>Appropriate patient's condition</i>)	-	-		
The normal rate of sinus rhythm is (C. <i>60-100</i>) beat / minute			-	-
The rate of beats in the heart is (B. <i>60-100</i>) beat / minute	-	-		
Diagnosis				
Intellectual or mental retardation and alcohol lead to (C. <i>Acceleration</i>)			-	-
One of the causes of heart failure is (B. <i>Myocardial Infarction</i>)			-	-
The one of the risk factors for heart failure is (A. <i>Smoking</i>)	-	-		
It is considered from the symptoms of heart failure (D. <i>Shortness of breath</i>)			-	-
Reduction of renal perfusion leads to the release of (B. <i>Aldosterone</i>) hormone by the kidney		-	-	
It is considered as one of the causes of heart failure (B. <i>Kidney failure</i>)		-	-	
Intervention				
The nurse should (D. <i>reinforce the teaching for short intervals</i>)			-	-

The right Position for the patient with HF is (B. Raise the head side of the bed)	1	0	<u>2</u>	<u>1</u>	3	3	0	2	33%	17%
Patient with HF is advised to (B. Simple exercises gradually increased over weeks)	3	1	<u>2</u>	<u>3</u>	1	2	0	0	33%	50%
Patient with HF is advised to (A. Do not add salt and fat to foods)	<u>4</u>	<u>6</u>	2	0	0	0	0	0	67%	100%
In case of weight gain of more than one kilogram during one day, this mean (B. Heart failure become more worse)	0	2	<u>6</u>	<u>4</u>	0	0	0	0	100%	67%
When the patient feels the start of deterioration and weakness in the leg or the lack of daily activity, then he/she must (B. Report to the doctor)	1	2	<u>5</u>	<u>3</u>	1	0	0	1	71%	50%
There is a correlation between (___) with an increased risk of myocardial infarction and sudden death (D. Practicing strong physical exercise)	0	0	4	0	1	1	<u>1</u>	<u>5</u>	17%	83%
It will be better to perform moderate intensity activity at least in most days of the week (A. 30 minutes)	<u>6</u>	<u>6</u>	0	0	0	0	0	0	100%	100%
It will be preferred to perform exercise (___) times a week (C. 5)	0	0	0	0	<u>2</u>	<u>3</u>	4	3	33%	50%
Physical training in rehabilitation sessions must be completed within (___), with the inclusion of the warm-up and cool down sessions (A. One hour)	<u>4</u>	<u>1</u>	1	2	1	2	0	1	67%	17%
Static Isometric exercises such as weightlifting and hand loads is with (___) than aerobic exercise such as jogging, swimming for heart failure patients (A. Less benefit)	<u>2</u>	<u>3</u>	2	3	2	0	0	0	33%	50%
To prevent low blood pressure immediately after strong exercise, patient is advised (D. Walking for a short time)	1	3	0	0	1	3	<u>4</u>	<u>0</u>	67%	0%
Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is (___) for patient with heart failure from (B. Advised)	0	2	<u>6</u>	<u>4</u>	0	0	0	0	100%	67%
Patients with heart failure controlled can eat (___) of sodium per day (A. Less than 2-3 grams)	<u>3</u>	<u>6</u>	2	0	1	0	0	0	50%	100%
(___) leads to HF (C. Obesity)	4	2	1	0	<u>1</u>	<u>4</u>	0	0	17%	67%
Heart failure patients are advised to (D. Postpones return to work or the main activity for some time)	0	2	1	3	3	0	<u>2</u>	<u>1</u>	33%	17%
Heart failure patient should be (___) to use of oral medications and injections to help local circulation (C. Allows for limited degree)	2	0	2	4	<u>1</u>	<u>2</u>	1	0	17%	33%
Patients with heart failure should not take the	0	0	<u>4</u>	<u>6</u>	2	0	0	0	66%	100%

The table showed the variations of answers of nurses assigned in Medicine Ward. Overall, there were remarkable differences on the answers during the two-phases as seen through improved scores, but also some scores have decreased from the pre-teaching phase. Significantly, Medicine Ward nurses were able to retain the perfect score prior and after the teaching intervention in the items no. 15 (Assessment), 18, 19 (Diagnosis) and 30 (Intervention) when compared with the Intensive Care Unit nurses whom have captured two items with 100%. On the contrary,

there were also questions relating to information about heart failure detection and management (items # 20 and 34) in which no one has answered correctly after attending the program, and yet was not usually observed with the ICU nurses. Moreover, there was a relative improvement in scores between the two phases, as nurses were able to yield understanding on the 48% (19) of the questions and choose the correct answer post intervention. But 40% (16) of the items were unsuccessful to be answered rightfully after being taught in the teaching program, and the remaining 13% (5) of the items has scores that were retained during the two phases.

Table 9. Frequency distribution of Geriatric Ward respondents' answers in the knowledge scale during pre-teaching and post-teaching phases

Questions		Answer Variations								% correct answers GW nurses (N=5)	
		A		B		C		D		Pre (01)	Post (02)
		01	02	01	02	01	02	01	02		
Assessment											
1	Heart is a muscular organ with four cavities which located in (C. <i>central area between the lungs</i>)	2	1	0	0	<u>1</u>	<u>4</u>	2	0	20%	100%
2	Muscular wall of the heart has three layers.And the inner layer of the heart called (A. <i>Endocardium</i>)	<u>3</u>	<u>2</u>	0	1	1	1	1	1	60%	40%
3	The heart consists of four chambers and is the strongest chamber in the heart (A. <i>Rightatrium</i>)	1	1	0	0	1	0	<u>3</u>	<u>4</u>	20%	80%
4	The heart receive blood through the coronary arteries, which in turn get the blood through (B. <i>Aortic artery</i>)	1	0	<u>2</u>	<u>4</u>	2	1	0	0	40%	80%
5	The real size of heart stroke could be measured by which of the following formula (A. <i>The difference between the End Diastolic Volume and the remaining amount of blood in the ventricle size</i>)	<u>4</u>	<u>3</u>	0	1	1	1	0	0	80%	60%
6	Heart beat generated by (B. <i>SA node</i>)	1	1	<u>3</u>	<u>3</u>	1	1	0	0	60%	60%
7	Multiplying heart rate in stroke volume represents (C. <i>Cardiac Output</i>)	0	2	0	0	<u>5</u>	<u>3</u>	0	0	100%	60%
8	The bicuspid and tricuspid valve are (C. <i>Atrioventricular valves</i>)	0	0	2	0	<u>1</u>	<u>3</u>	2	2	20%	60%
9	Aortic artery arch sent blood directly to (B. <i>The main left coronary artery</i>)	0	1	<u>3</u>	<u>1</u>	0	1	2	2	60%	20%
10	The sac membrane that surround the heart is called (B. <i>Pericardium membrane</i>)	1	0	<u>4</u>	<u>5</u>	0	0	0	0	80%	100%
11	Pericardial sac membrane composed of (B. <i>Two layers</i>)	1	0	<u>2</u>	<u>2</u>	2	3	0	0	40%	40%
12	A group of cells in the upper part of the right atrium, natural origin normal electrical impulse (A. <i>Sinoatrial node</i>)	<u>4</u>	<u>4</u>	0	0	1	1	0	0	80%	80%
13	The normal rate of heart beating is (___) times / minute (D. <i>60</i>)	0	0	2	2	0	0	<u>3</u>	<u>3</u>	60%	60%
Planning											
14	The preparing the discharge plan by the nurse consider (A. <i>Appropriate</i>)	<u>4</u>	<u>5</u>	1	0	0	0	0	0	80%	100%
15	The normal rate of sinoatrial node in adult is (___) beat / minute (D. <i>60-100</i>)	0	0	0	2	0	0	<u>5</u>	<u>3</u>	100%	60%

16	The rate of beats in the atrioventricular node is () beat / minute (A. 40-60)	<u>1</u>	<u>5</u>	0	0	0	0	4	0	20%	100%
Diagnosis											
17	Intellectual or mental stress, tobacco, coffee and alcohol lead to () heart rate (C. Acceleration)	1	1	0	0	<u>4</u>	<u>4</u>	0	0	80%	80%
18	One of the causes of heart failure is (C. Myocardial Infarction)	1	0	0	0	<u>4</u>	<u>5</u>	0	0	80%	100%
19	The one of the risk factors that leading to heart failure is (A. Smoking and alcohol)	<u>5</u>	<u>5</u>	0	0	0	0	0	0	100%	100%
20	It is considered from the common signs and symptoms of heart failure (A. Nausea and cough)	<u>1</u>	2	0	0	1	0	3	3	20%	40%
21	Reduction of renal perfusion due to heart failure leads to the release of () hormone by the kidneys (C. Renin)	0	0	1	0	<u>4</u>	<u>5</u>	0	0	80%	100%
22	It is considered as one of the complications of heart failure (B. Kidney failure)	0	0	<u>2</u>	<u>5</u>	2	0	1	0	40%	100%
Intervention											
23	Patient with heart failure will be advised with (D. Perform exercise for short intervals)	0	1	4	3	0	0	<u>1</u>	<u>1</u>	20%	20%
24	The right Position for the patient with HF is (B. Raise the head side of the bed)	0	1	<u>3</u>	<u>3</u>	1	1	1	0	60%	60%
25	Patient with HF is advised to (B. Simple exercises gradually increased over weeks)	1	1	<u>2</u>	<u>4</u>	1	0	1	0	40%	80%
26	Patient with HF is advised to (A. Do not add salt and fat to foods)	<u>5</u>	<u>4</u>	0	1	0	0	0	0	100%	80%
27	In case of weight gain of more than one kilogram during one day, this mean (B. Heart failure become more worse)	0	0	<u>5</u>	<u>4</u>	0	0	0	1	100%	80%
28	When the patient feels the start of deterioration and weakness in the leg or the lack of daily activity, then he/she must (B. Report to the doctor)	1	0	<u>4</u>	<u>4</u>	0	0	0	1	80%	80%
29	There is a correlation between () with an increased risk of myocardial infarction and sudden death (D. Practicing strong physical exercise)	0	0	0	1	3	2	<u>2</u>	<u>2</u>	40%	40%
30	It will be better to perform moderate intensity activity at least in most days of the week (A. 30 minutes)	<u>4</u>	<u>5</u>	1	0	0	0	0	0	80%	100%
31	It will be preferred to perform exercise () times a week (C. 5)	0	0	0	0	<u>0</u>	<u>3</u>	5	2	0%	60%
32	Physical training in rehabilitation sessions must be completed within (), with the inclusion of the warm-up and cool down sessions (A. One hour)	<u>2</u>	<u>0</u>	1	0	2	3	0	0	40%	80%
33	Static Isometric exercises such as weightlifting and hand loads is with () than aerobic exercise such as jogging, swimming for heart failure patients (A. Less benefit)	<u>3</u>	<u>3</u>	2	1	0	0	0	1	60%	60%
34	To prevent low blood pressure immediately after strong exercise, patient is advised (D. Walking for a short time)	2	1	0	0	1	4	<u>2</u>	<u>0</u>	40%	0%
35	Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is () for patient with heart failure from (B. Advised)	1	2	<u>3</u>	<u>3</u>	1	0	0	0	60%	60%
36	Patients with heart failure controlled can eat () of sodium per day (A. Less than 2-3 grams)	<u>4</u>	<u>3</u>	0	1	0	0	1	1	80%	60%
37	() leads to HF (C. Obesity)	2	3	1	0	<u>1</u>	<u>2</u>	1	0	20%	40%
38	Heart failure patients are advised to (D. Postpones return to work or the main activity for some time)	1	1	0	1	2	1	<u>2</u>	<u>2</u>	40%	40%
39	Heart failure patient should be () to use of oral medications and injections to help local erection (C. Allows for limited degree)	2	0	2	4	<u>1</u>	<u>1</u>	0	0	20%	20%
40	Patients with HF are advised to take the Diuretic medication (B. At morning)	1	0	<u>3</u>	<u>3</u>	0	1	1	1	60%	60%

This table focused on the responses of Geriatric Ward nurses on the scope of what they knew about heart failure. Generally, 40% (16) of the questions have improved based on the increased scores after the respondents attended the teaching program. There were retained scores tallied in 38% (15 items) of questions where no changes were noted after the two phases. But nurses from Geriatric Ward abled to maintain a low rate of items (23% or 9) that were answered incorrectly on the post-teaching phase. This was somewhat a relatively low rate compared to the performance of ICU and Medicine Ward nurses in terms of incorrect items on the knowledge scale respective of the administration of the teaching program. On the other hand, there was only one (1) question (item #34) pertaining to mobility recommendations after discharge that were answered incorrectly by all the nurses in Geriatric Ward after being taught in the program and was considered as a low rate when assessed based on the answers tallied from the nurses in the other two areas.

Table 10. Frequency distribution of no. of respondents who got correct answers per item in the knowledge scale

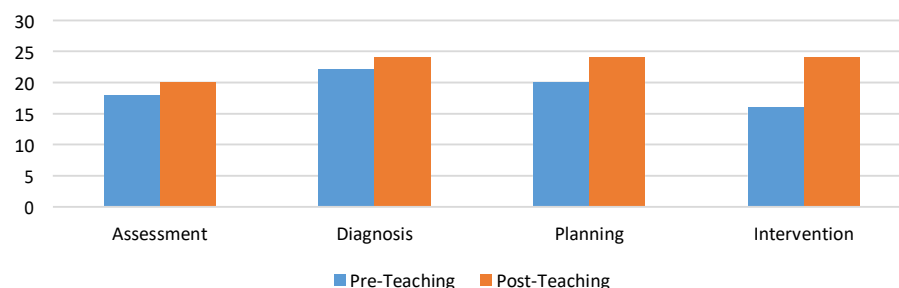
Questions		Respondents who got correct answers (N=5)		Change in Score
		Pre-Teaching	Post-Teaching	
Assessment				
1	Heart is a muscular organ with four cavities which located in (C. <i>central area between the lungs</i>)	11	20	+ 9
2	Muscular wall of the heart has three layers. And the inner layer of the heart called (A. <i>Endocardium</i>)	20	24	+4
3	The heart consists of four chambers and is the strongest chamber in the heart (A. <i>Right atrium</i>)	21	21	0
4	The heart receive blood through the coronary arteries, which in turn get the blood through (B. <i>Aortic artery</i>)	14	17	+3
5	The real size of heart stroke could be measured by which of the following formula (A. <i>The difference between the End Diastolic Volume and the remaining amount of blood in the ventricle size</i>)	11	15	+4
6	Heartbeat generated by (B. <i>SA node</i>)	24	20	-4
7	Multiplying heart rate in stroke volume represents (C. <i>Cardiac Output</i>)	24	16	-8
8	The bicuspid and tricuspid valve are (C. <i>Atrioventricular valves</i>)	17	19	+5
9	Aortic artery arch sent blood directly to (B. <i>The main left coronary artery</i>)	16	16	0
10	The sac membrane that surrounds the heart is called (B. <i>Pericardium membrane</i>)	28	26	-2
11	Pericardial sac membrane composed of (B. <i>Two layers</i>)	14	21	+7
12	A group of cells in the upper part of the right atrium, natural origin normal electrical impulse (A. <i>Sinoatrial node</i>)	20	26	+6
13	The normal rate of heart beating is (___) times / minute (D. <i>60</i>)	15	16	+1
Planning				

14	The preparing the discharge plan by the nurse consider (A. <i>Appropriate</i>)	20	24	+4
15	The normal rate of sinoatrial node in adult is () beat / minute (D. <i>60-100</i>)	18	23	+5
16	The rate of beats in the atrioventricular node is () beat / minute (A. <i>40-60</i>)	11	25	+14
Diagnosis				
17	Intellectual or mental stress, tobacco, coffee and alcohol lead to () heart rate (C. <i>Acceleration</i>)	22	22	0
18	One of the causes of heart failure is (C. <i>Myocardial Infarction</i>)	29	30	+1
19	The one of the risk factors that leading to heart failure is (A. <i>Smoking and alcohol</i>)	30	30	0
20	It is considered from the common signs and symptoms of heart failure (A. <i>Nausea and cough</i>)	9	10	+1
21	Reduction of renal perfusion due to heart failure leads to the release of () hormone by the kidneys (C. <i>Renin</i>)	23	23	0
22	It is considered as one of the complications of heart failure (B. <i>Kidney failure</i>)	19	29	+10
Intervention				
23	Patient with heart failure will be advised with (D. <i>Perform exercise for short intervals</i>)	13	21	+8
24	The right Position for the patient with HF is (B. <i>Raise the head side of the bed</i>)	15	12	-3
25	Patient with HF is advised to (B. <i>Simple exercises gradually increased over weeks</i>)	12	20	+8
26	Patient with HF is advised to (A. <i>Do not add salt and fat to foods</i>)	26	28	+2
27	In case of weight gain of more than one kilogram during one day, this mean (B. <i>Heart failure become more worse</i>)	24	22	-2
28	When the patient feels the start of deterioration and weakness in the leg or the lack of daily activity, then he/she must (B. <i>Report to the doctor</i>)	21	22	+1
29	There is a correlation between () with an increased risk of myocardial infarction and sudden death (D. <i>Practicing strong physical exercise</i>)	8	15	+7
30	It will be better to perform moderate intensity activity at least in most days of the week (A. <i>30 minutes</i>)	22	27	+5
31	It will be preferred to perform exercise () times a week (C. <i>5</i>)	6	15	+9
32	Physical training in rehabilitation sessions must be completed within (), with the inclusion of the warm-up and cool down sessions (A. <i>One hour</i>)	16	16	0
33	Static Isometric exercises such as weightlifting and hand loads is with () than aerobic exercise such as jogging, swimming for heart failure patients (A. <i>Less benefit</i>)	15	21	+6
34	To prevent low blood pressure immediately after strong exercise, patient is advised (D. <i>Walking for a short time</i>)	9	5	-4
35	Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is () for patient with heart failure from (B. <i>Advised</i>)	24	21	-3
36	Patients with heart failure controlled can eat () of sodium per day (A. <i>Less than 2-3 grams</i>)	21	27	+6
37	() leads to HF (C. <i>Obesity</i>)	14	16	+2
38	Heart failure patients are advised to (D. <i>Postpones return to work or the main activity for some time</i>)	11	12	+1
39	Heart failure patient should be () to use of oral medications and injections to help local erection (C. <i>Allows for limited degree</i>)	8	9	+1
40	Patients with HF are advised to take the Diuretic medication (B. <i>At morning</i>)	23	23	0

In this table, it described the totality of scores on the knowledge scale as summated and sorted at the same time varying on the phases of data gathering: pre- and post-teaching program. In the pre-teaching phase, few nurses were able to get correct responses on the questions regarding principles on the management of heart

failure. Items #29, 31, 34 and 39 has recorded the least number ranging from 6-9 nurses who got it correctly. On the other hand, questions describing information about the clinical presentations of patients with heart failure as well as anatomy and physiology of cardiovascular systems has the greater no. of correct responses from about 11-28 respondents. After the teaching program, nurses from the 3 specified areas were able to cope with their weakest link in the category of intervention, as only items #34 and #39 got the lowest responses with 5 and 9 respectively. More so, item #30 that pertained to the risk factor of heart failure was consistently answered correctly by all of respondents in both phases. In terms of change in score, 26 items, or 65% of the questions were improved in terms of correct answers, where most of the items (12) items were about heart failure management contrary to the previous scores tallied in the pre-teaching phases. The highest difference in scores noted was stipulated in the item #16 describing the cardiac conduction where additional 14 nurses have rightfully answered after the teaching program; however, a great decrease in correct responses was observed in the item #8 which expounded the definition of cardiac output as 7 nurses have not chosen their previous right answer similarly after being taught of it. Meanwhile, the mean score of 2-3 in a 40-item knowledge scale has yielded a positive change after each nurse undergone the educational program.

Figure 9. Mean of overall respondents who got correct answers per category presented in the knowledge scale



During the pre-teaching phase, items about to clinical intervention necessitated for the management of patients with heart failure were the least answered by at least 16 respondents (53%, n=30). This finding was also seen in the study by Mahramus et al. (2014) and Al-Hchaim et al. (2016) as nurses were not sufficiently knowledgeable in this aspect with respect upon the educational program. Rice et al. (2017) recognized that nurses could be a solution to the problems of limited knowledge relating heart failure among patients through reinforcement of patient education; and yet this could only be attained if nurses have surmounting source of knowledge about the illness. Particularly, this predicament must be addressed as their level of knowledge in this aspect was important with the significance on the rise of incidence of this disease (de Azevedo et al., 2018), specifically influence also the probable rehospitalization rates among discharge patients, which most instances pertaining with heart failure cases could be preventable (Rice et al., 2017). Meanwhile, about 22 (73%) respondents were informed of modalities in diagnosing heart failure prior to undergoing an educational program. This was relatively a good indicator that 73% of nurses were well informed of such wherein their understanding also benefited their patients as they were primed and guided about the process of detecting the disease with their symptoms. However, only 18 out of 30 (60%) of nurses did correctly distinguished assessment factors present to every heart failure patient. This was crucial because nurses must therefore be an expert on identifying clinical presentation at a prompt state to be addressed appropriately, later must be learned also by patients in order to practice self-care and self-management after discharge, that could be attained if a nurse was well-equipped with competencies enough to be shared to their patients. Approximately 20 nurses (63%) were informed of proper planning prior to discharging these patients. After the educational program, all aspects- Assessment, Diagnosis, Planning and Intervention

have relative improvements in score by all of respondents, by around 6-14% (6-14 correct items). This meant that the nursing program like such has been beneficial in augmenting gaps and providing updates in the knowledge regarding heart failure, which was also evident in the study of Garriss, Al-Hchaim, et al. and de Azevedo, et al. in 2014, 2016 and 2018 respectively.

C. Attitude of Staff Nurses

Table 11. Mean of ICU respondents' answers on attitude scale during pre- and post-teaching phases

Statement		Attitude Scale							
		Pre-Teaching Phase				Post-Teaching Phase			
		Min	Max	SD	Mean	Min	Max	SD	Mean
1	I feel that the nursing care for the client has a direct effect on the patient's physical and mental health.	1.00	5.00	0.94	4.68	2.00	5.00	0.82	4.68
2	I believe that preventing noise around the client plays an effective role in the progress of the heart condition.	1.00	5.00	1.10	4.10	3.00	5.00	0.83	4.42
3	I feel that setting a nursing plan for the client can protect from noise and reduce sleep disturbances thus speeding up the recovery.	1.00	5.00	1.04	4.26	2.00	5.00	0.83	4.57
4	I think explaining the client's condition to his/her family may lead to speed up the client adaptation to his/her condition.	1.00	5.00	1.07	4.37	3.00	5.00	0.83	4.57
5	I think the client's behavior and the degree of adaptation depend on his/her social and educational level.	1.00	5.00	1.15	4.00	2.00	5.00	1.07	4.15
6	I think the client feels secure in the medical units when the medical team members are by his/her side all the time	1.00	5.00	1.47	3.57	1.00	5.00	1.12	4.05
7	I believe that health education is important to the client.	1.00	5.00	0.93	4.73	2.00	5.00	0.83	4.63
8	I think encouraging the client to speak about his/her fears is important to control it.	1.00	5.00	0.96	4.63	3.00	5.00	0.69	4.47
9	I think it is important to train the cardiac nurse before and	1.00	5.00	1.02	4.47	3.00	5.00	0.77	4.47

	during duty to be able to raise her performance level.								
10	I believe it is important that all staff in the medical units should work as a team to raise the level of their performance.	1.00	5.00	0.95	4.68	2.00	5.00	0.90	4.47
11	I think that explaining the nursing procedures to the client is boring and useless.	1.00	5.00	1.25	1.63	1.00	5.00	1.07	1.57
12	I think placing the client in the intensive care room has a negative effect on his/her mental health.	1.00	5.00	0.88	1.89	1.00	4.00	1.10	2.10
13	I think discussing the client's condition in front of him/her may lead to increase his/her anxiety.	1.00	5.00	0.99	2.73	1.00	5.00	1.07	2.57
14	I think that a client who has no idea about his/her illness is easy to deal with.	1.00	5.00	1.12	2.05	1.00	5.00	1.34	2.57
15	I feel the more the client is aware of the nature of their illness, the more difficult it will be to deal with them.	1.00	5.00	1.18	2.21	1.00	5.00	1.17	2.15
16	I feel bored when I listen to the client's complaints because he/she is always complaining and asking the same questions every day.	1.00	5.00	0.91	2.05	1.00	4.00	0.97	1.94
17	I feel depressed as a result of dealing with the client with heart failure.	1.00	5.00	1.12	2.05	1.00	5.00	1.11	2.15
18	I believe any qualified nurse can work in Cardiac Care units.	1.00	5.00	1.30	3.42	2.00	5.00	1.10	3.68

The table presented the answers of ICU nurses in average pertaining to their self-evaluation on their attitude towards heart failure care before and after the teaching program. In the 18-item attitude scale, there were significant changes in mean answers respective of the teaching intervention. In both two phases, nurses from Intensive Care Unit did highly agreed constantly with the belief that there was a remarkable impact and importance of nursing care and health education to patient's wellbeing (items #1 and #7). But their moderate agreement has changed to strong agreement on the view of formulating a nursing care plan as a way to address problems on noise and sleep disturbances (item #3) since the area has noise triggers

due to poor spacing between beds as patients were not entitled for personal rooms also the area has noise triggers due to equipment alarms like mechanical ventilator, infusion pumps and cardiac monitors. ICU nurses also placed strong agreement on integration of family to the patient's care have effect on augmenting their condition and recuperation (item #4) after the teaching program since they have learned in the program of the importance of family participation in the course of illness being it palliative which demand support in the attainment of self-care. More so, his also seen on the items #8 and #10 wherein nurses have previously agreed but has raised into modest level on the aspect of interaction between patient-to-staff and staff-to-staff in order to increase efficiency on the delivery of care. Meanwhile, intermediate level of agreement was reported on the statements that describe about noise prevention, influence of patient's behavior, their sense of security as well as cardiac nurse training and qualification (items #2, #5, #6 and #9, #18). On the other hand, nurses moderately disagreed on the belief regarding expounding nurses' procedure as a boring activity, negative effect of ICU admission to patient's perception, awareness of patient's condition do partake critical management, nursing effect of heart failure care to patients in the form of depression (items #11, #12, #15, #16 and #17). And yet, ICU respondents for fairly affirm that discussion on patient's condition can beget anxiety (item #13) and the circumstance that when a patient was not informed of his/her condition is easily communicated with (item #14) in which was previously disagreed on the pre-teaching phase.

Table Error! No text of specified style in document..1 Mean of medicine ward respondents' answers on attitude scale during pre and post-teaching phases

	Statement	Attitude Scale							
		Pre-Teaching Phase				Post-Teaching Phase			
		Min	Max	SD	Mean	Min	Max	SD	Mean
1	I feel that the nursing care for the client has a direct effect on the patient's physical and mental health.	1.00	5.00	1.50	3.33	4.00	5.00	0.55	4.50
2	I believe that preventing noise around the client plays an effective role in the progress of the heart condition.	1.00	5.00	1.50	3.33	4.00	5.00	0.55	4.50
3	I feel that setting a nursing plan for the client can protect from noise and reduce sleep disturbances thus speeding up the recovery.	1.00	5.00	1.50	3.33	4.00	5.00	0.55	4.50
4	I think explaining the client's condition to his/her family may lead to speed up the client adaptation to his/her condition.	3.00	5.00	0.98	3.83	4.00	5.00	0.55	4.50
5	I think the client's behavior and the degree of adaptation depend on his/her social and educational level.	3.00	5.00	1.03	3.67	3.00	5.00	1.03	4.33
6	I think the client feels secure in the medical units when the medical team members are by his/her side all the time	2.00	5.00	1.22	3.50	3.00	5.00	1.10	4.00
7	I believe that health education is important to the client.	1.00	5.00	1.51	3.33	3.00	5.00	0.82	4.67
8	I think encouraging the client to speak about his/her fears is important to control it.	1.00	5.00	1.67	3.00	3.00	5.00	0.82	4.33
9	I think it is important to train the cardiac nurse before and during duty to be able to raise her performance level.	3.00	5.00	1.03	3.67	4.00	5.00	0.41	4.83
10	I believe it is important that all staff in the medical units should work as a team to raise the level of their performance.	1.00	5.00	1.51	3.33	2.00	5.00	1.21	4.33
11	I think that explaining the nursing procedures to the client is boring and useless.	2.00	5.00	0.98	3.17	1.00	5.00	1.86	3.33
12	I think placing the client in the intensive care room has a negative effect on his/her mental health.	3.00	5.00	1.03	3.67	2.00	5.00	1.55	3.00
13	I think discussing the client's condition in front of him/her may lead to increase his/her anxiety.	3.00	5.00	0.83	3.50	2.00	5.00	1.47	3.17
14	I think that a client who has no idea about his/her illness is easy to deal with.	1.00	5.00	1.33	3.17	2.00	5.00	1.22	3.50
15	I feel the more the client is aware of the nature of their	1.00	5.00	1.33	3.17	2.00	5.00	1.22	3.50

	illness, the more difficult it will be to deal with them.								
16	I feel bored when I listen to the client's complaints because he/she is always complaining and asking the same questions every day.	1.00	5.00	1.33	2.83	2.00	5.00	1.47	3.17
17	I feel depressed as a result of dealing with the client with heart failure.	1.00	5.00	1.33	2.83	1.00	5.00	1.51	3.67
18	I believe any qualified nurse can work in Cardiac Care units.	2.00	5.00	1.03	3.33	3.00	5.00	0.82	4.67

This table described the average responses of Medicine Ward nurses in line with their self-evaluation on their attitude pertaining to heart failure. Generally, there were significant changes in mean scores in each item as warranted during the pre- and post-teaching phase. In the post-teaching phase, nurses deemed highly significant the effect of nursing care, role of noise prevention, and impact of nursing care plan for recovery, communicating with the family regarding patient's condition, importance of health education, cardiac nurse training and qualification. More so, it was noted that Medicine Ward nurses placed a moderate significance on the causes of patient's behavior and adaptation level, patient's sense of security, exploration of their fears, value of teamwork, degree of difficulty in dealing with the patient tantamount to their level of knowledge of their condition and development of nurses' depression as an effect of taking care with heart failure patients. On the other note, there was a fair agreement that nurses have reported in the statements that scrutinize that appraisal of procedures as a useless activity and augmenting anxiety among patients when being discussed with his/her condition. Most especially, Medicine Ward nurses thought of ICU admission has negative impact on patient's mental health which was contrary to what was reported by ICU nurses being as they prepare and transfer them in ICU.

Table 13. Mean of geriatric ward respondents' answers on attitude scale during pre and post-teaching phases

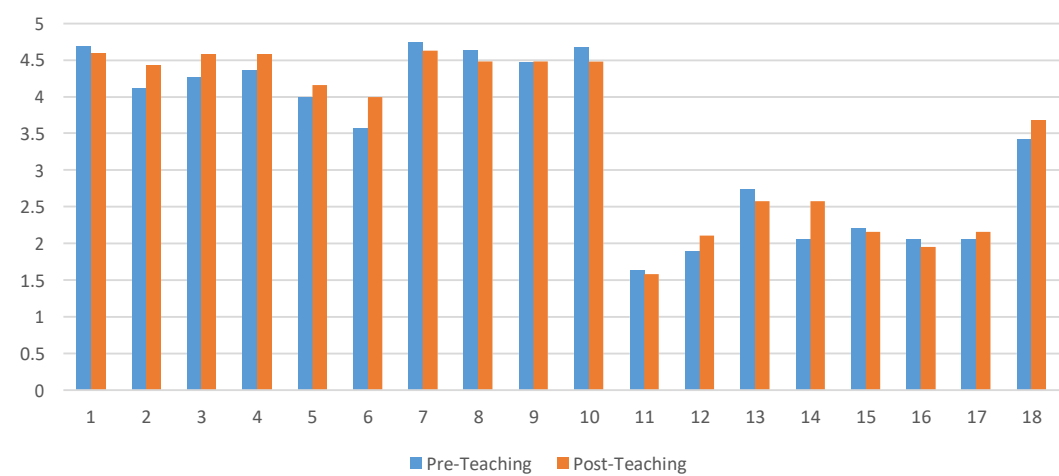
	Statement	Attitude Scale							
		Pre-Teaching Phase				Post-Teaching Phase			
		Min	Max	SD	Mean	Min	Max	SD	Mean
1	I feel that the nursing care for the client has a direct effect on the patient's physical and mental health.	4.00	5.00	0.44	4.80	3.00	5.00	0.89	4.60
2	I believe that preventing noise around the client plays an effective role in the progress of the heart condition.	3.00	5.00	0.83	4.20	3.00	5.00	0.89	4.60
3	I feel that setting a nursing plan for the client can protect from noise and reduce sleep disturbances thus speeding up the recovery.	5.00	5.00	0.00	5.00	3.00	5.00	0.89	4.60
4	I think explaining the client's condition to his/her family may lead to speed up the client adaptation to his/her condition.	3.00	5.00	0.89	4.40	4.00	5.00	0.45	4.80
5	I think the client's behavior and the degree of adaptation depend on his/her social and educational level.	3.00	5.00	1.00	4.00	4.00	5.00	1.64	4.80
6	I think the client feels secure in the medical units when the medical team members are by his/her side all the time	2.00	4.00	0.84	3.20	1.00	5.00	1.64	3.80
7	I believe that health education is important to the client.	5.00	5.00	0.00	5.00	4.00	5.00	0.45	4.80
8	I think encouraging the client to speak about his/her fears is important to control it.	5.00	5.00	0.00	5.00	5.00	5.00	0.00	5.00
9	I think it is important to train the cardiac nurse before and during duty to be able to raise her performance level.	5.00	5.00	0.00	5.00	3.00	5.00	0.89	4.40
10	I believe it is important that all staff in the medical units should work as a team to raise the level of their performance.	4.00	5.00	0.45	4.80	4.00	5.00	0.45	4.80
11	I think that explaining the nursing procedures to the client is boring and useless.	1.00	4.00	1.34	1.60	1.00	5.00	2.05	3.20
12	I think placing the client in the intensive care room has a negative effect on his/her mental health.	1.00	4.00	1.41	2.00	1.00	5.00	1.79	3.80
13	I think discussing the client's condition in front of him/her may lead to increase his/her anxiety.	1.00	4.00	1.30	2.20	2.00	5.00	1.51	3.40
14	I think that a client who has no idea about his/her illness is easy to deal with.	1.00	4.00	1.30	1.80	1.00	5.00	1.64	3.20
15	I feel the more the client is aware of the nature of their illness, the more difficult it will be to deal with them.	1.00	4.00	1.41	2.00	1.00	5.00	1.79	2.80
16	I feel bored when I listen to the client's complaints because he/she is always complaining and asking the same questions every day.	1.00	4.00	1.41	2.00	1.00	5.00	1.81	3.40

17	I feel depressed as a result of dealing with the client with heart failure.	1.00	2.00	0.55	1.40	1.00	5.00	1.81	2.60
18	I believe any qualified nurse can work in Cardiac Care units.	1.00	5.00	1.64	2.20	1.00	5.00	1.94	3.60

The table provided information about the responses in the attitude scale given by nurses from Geriatric Ward during the two (2) phases of the study. There were differences that has been noted in the mean scores for each statement as measured with a scale. Specifically, after the course of the teaching program, nurses strongly agreed on the first 5 items that were about effect of nursing care to physical and mental health, role of noise prevention in the development of patient's condition, necessity of a nursing care plan in diminishing noise and sleep problems, communicating patient's condition to own's family, influence of social and educational status to the patient's behavioral and adaptation level, importance of health education, exploration of fears leading to its control, importance of teamwork among medical staff. In addition, nurses also shared their moderate agreements with regards to the staff presence which begets sense of security to patients, the need of the nurse to be trained linking to his/her performance level, undesirable mental health effect of ICU transfer to patients and nurse's qualification entailing assignment in cardiac care units. As to mention, nurses undertake their training and experience in the ward before having appointed to be in the special area considering their length of stay in the area as well as their performance in bedside care, this was why Geriatric Ward nurses believed that qualification is vital before the appointment in order to attend to the demanding needs of the patients with a chronic cardiovascular disease like heart failure, learned in the program. However, respondents were also cleared that they plainly agreed on the following areas: viewing of educating procedures as unnecessary, explaining to the patients themselves can amplify anxiety, the link of degree of awareness of the patient regarding his condition to the level of communicating with him/her, fostering

depression among nurses after having been cared patients diagnosed with heart failure.

Figure 10. Mean of overall responses in the attitude scale



The figure illustrated the average responses of all nurses assigned in Medicine ward, Geriatric ward and Intensive Care Unit as they performed self-evaluation on their attitude when it comes to caring patients with heart failure. It was tallied that 0.10 is the mean score noted as the difference between the responses of nurses prior and after attending the educational program, which was summated as a slight increase in points in the scale as they evaluated their attitude. And yet, it was obvious that item #14 that evokes the statement, *“I think a client who has no idea about his/her illness is easy to deal with”*, which at par in the aspect of nurse-to-patient interaction, has showed the highest increase in points by 0.53 (from 2.05 to 2.58) or at least 1 point high in the scale as connoted that nurses previously disagreed in the statement but radically agreed to the said circumstance. Item #9 which elaborated as *“I think it is important to train the cardiac nurse before and during duty to be able to raise her performance level”*, has the lowest difference of score of 0.10 (from 4.47 to 4.48) that proved that the educational program they attended did not have significant influence of the view of nurses as they moderately agree about the need of training before

assignment in cardiac units. Nevertheless, suitable education and training for nurses could seamlessly lead to improvements of patient care and its processes (Riley et al., 2016).

On the other hand, item #10 or *“I believe it is important that all staff in the medical units should work as a team to raise the level of their performance”* has the greatest negative difference (-0.20), wherein that before the program, nurses strongly agreed (4.68) with the statement but has changed into moderate agreement (4.48) after the program. Meanwhile, in the prospective, cross-sectional study by Uchmanowicz et al. (2019), teamwork was greatly rooted for and tagged as one most significant guideline driven change which can be attained with the introduction of multidisciplinary team approach in the management of patients with cardiovascular disease. Nurses must then be trained to collaborate with the members of healthcare team to centralize the care of patients with heart failure being a patient advocate. Items #11 or *“I think that explaining the nursing procedures to the client is boring and useless”* and item #15 or *“I feel more the client is aware of the nature of their illness, the more difficult will be to deal with them”* has the lowest negative difference of -0.05, which nurses regardless of their attendance to the teaching program do disagree to those mentioned statements.

D. Difference on the knowledge of nurses in heart failure management prior and after administration of nursing educational program

Table Error! No text of specified style in document..**2** Pre-teaching and post-teaching scores of respondents

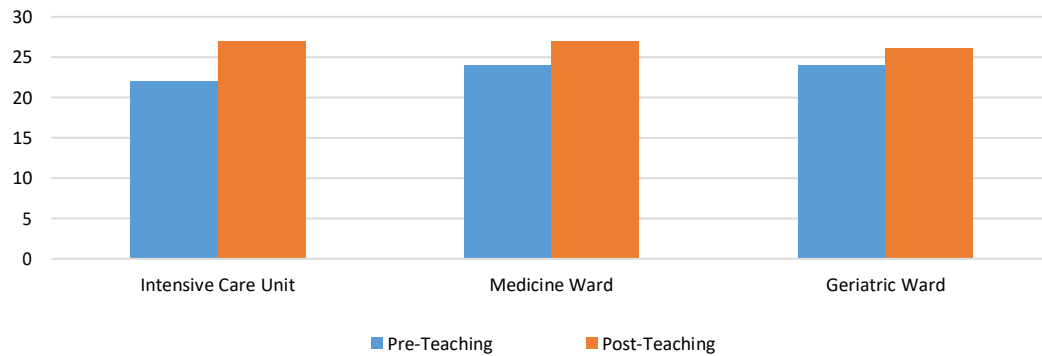
No.	Respondent Tags	Pre-Teaching Score	Post-Teaching Score	Change in Score
1	I-DO	18	24	+6
2	I-AM	20	33	+13
3	I-AD	20	24	+4
4	I-CA	30	34	+4
5	I-MS	30	34	+4
6	I-GA	17	20	+3
7	I-CA	20	22	+2
8	I-CJ	19	28	+9

9	I-LF	26	29	+3
10	I-TJ	26	31	+5
11	I-AN	21	33	+12
12	I-MA	22	22	0
13	I-FF	23	21	-2
14	I-CN	24	29	+5
15	I-CM	21	28	+7
16	I-RS	15	23	+8
17	I-AF	22	32	+10
18	I-EA	28	30	+2
19	I-GS	15	25	+10
20	M-BM	21	25	+4
21	M-BM	23	25	+2
22	M-KA	33	33	0
23	M-VA	23	26	+3
24	M-PA	36	25	-11
25	M-KM	6	25	+19
26	G-BM	26	30	+4
27	G-LD	26	33	+7
28	G-BD	25	17	-8
29	G-SN	25	26	+1
30	G-AN	20	25	+5

This table systematically described the performance of each nurse in the 3 specified areas during the administration of tool that seeks to measure their knowledge about the principles of heart failure along with intervention of an educational program. Generally, each respondent who have scrutinized through the sets of inclusion criteria in the study, has assigned with corresponding tags to provide anonymity as well as efficient data recording. Also, each correct answer was pointed as 1 and incorrect ones were definitely given no point, hence a total of 40 points were identified as the perfect score in the knowledge scale. In this data-run, prior to attending the teaching program, the lowest score was identified as 6 attained from one of the nurses in Geriatric Ward, and the highest score came from the Medicine Ward group who attained 36 points in the 40-item knowledge scale. With the facilitation of a 1-hour teaching program focusing heart failure, there is a significant change recorded, being 17 points as the lowest score achieved still from one of the nurses from Geriatric Ward, but plummeted only to 34 points as the highest, attained by two ICU nurses. To summate, the mean change on score was tallied as approximately 4 points in respect to the administration of the teaching program. The highest change in score was noted to be 19 points which was achieved by a nurse from Medicine Ward who surprisingly got the lowest score

prior the program. On the contrary, the lowest change in score was -11 which was attained by a Geriatric Ward nurse whom ironically the same person who got the highest score before the intervention.

Figure 11. Mean scores of respondents per area of assignment



The figure depicted the comparison of differences in scores attained by nurses assigned in 3 specified units as they undergo teaching program about heart failure care and management. In this state, it was evident that there were remarkable changes by increased trend between the two period for all areas. A mean score of 3-4 points was noted in totality, wherein in average a nurse has partaken a significant improvement of scores after attending the program. Specifically, nurses from Intensive Care Unit has recorded the highest positive difference in score with 5 points (from 22 to 27, in average) with them being taught in the program, whilst Geriatric Ward nurses have attained lowest in scores difference with 2 points (from 24 to 26, in average). On the other hand, Barrett et al. (2015) found out in their study that nurses assigned in CCU demonstrated increased in knowledge than those in cardiology wards, specifically in this study, Intensive Care Unit and medical wards, Medicine and Geriatric Ward. This could be linked to their consistent experience in handling critical cases like of heart failure compared to the ward nurses who have relatively caring for patients at stable state.

Table 14. Difference of pre-teaching and post-teaching scores of overall respondents using paired t-test

				Paired Differences				
Pre-Teaching and Post-Teaching Scores	Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig (2-tailed)
				Lower	Upper			
		-4.36	5.76	1.05	-6.05	-2.21	-4.14	29

The two specified scores from two different phases of this study: pre-teaching and post-teaching are positively correlated ($r=0.00$). The value proved that there was significant statistical difference between the scores attained by total of 30 respondents during the pre-teaching and post-teaching program, as majority of the nurses have captured substantial information that were relative to their practice whether in ICU or wards. Moreover, Al-Hchaim & Hamza also noted this finding in their study in 2016. In addition, Sundel & Ea (2019) who conducted pre-intervention and two sets of post-intervention surveys has also witnessed the same trend and later recommended that the a more-driven teaching intervention may attribute more improvement in terms of knowledge in the aspect of heart failure.

Table 15. Relationship between gender and knowledge level of respondents using chi-square test

		Score			Total
		Average (14-26)	Excellent (27-40)		
Gender	Male	Count	4	6	10
		Expected	5.7	4.3	10.0
	Female	Count	13	7	20
		Expected	11.3	8.7	20.0
Total	Count		17	13	30
	Expected		17.0	13.0	30.0
Fischer's Exact Test				Exact Sig. (2-sided)	.255

This table presented the association between knowledge and gender of nurses particularly caring for patients with heart failure in which has found not statistically

related with each other (p value of 0.26, $p < 0.05$), as what was observed by Sanad in 2017. This was to explain that the female dominance among nurses from the wards and ICU have not yielded in measuring their intellectual capacity, more so with regards to heart failure.

Table 16. Relationship between area of assignment and knowledge level

		Score		Total
		Average (14-26)	Excellent (27-40)	
Area	Intensive Care Unit	10	9	19
	Medicine Ward	4	2	6
	Geriatric Ward	3	2	5
Likelihood Ratio	Value 3.99	df 2	Asymptotic Significance (2-sided): 0.82	30

In this table, it was noted that there was no significant relationship between the area of assignment and the measurement of the knowledge about heart failure among nurses (p value of 3.99, $p < 0.05$) similarly to what was found in the study by Al-Hchaim & Hamza in 2016. This was unexpected assessment since nurses from ICU have recorded better performance during the post-test administration, also contrary to what was emphasized by Sundel & Ea in (2018) that nurses' knowledge towards heart failure may be attributed from the area of clinical practice.

Table 17. Relationship between years of experience (area) and knowledge level of respondents using chi-square test

		Score		Total
		Average (14-26)	Excellent (27-40)	
Years of Experience	6 months	1	3	4
	1 year	5	6	11
	2 years	6	2	8
	3 years	5	0	5
	5 years	0	1	1
	7 years	0	1	1
Total		17	13	30
Likelihood Ratio	Value 1.40	df 5	Asymptotic Significance (2-sided)	.030

The table presented the relationship between nurses' knowledge and their rendering years of experience in the area of assignment specifically medical units, which has summated to be statistically significant with p value of 0.03 ($p < 0.05$). This was somewhat conclusive that the mere knowledge of nurses about care and management in heart failure could be propelled by their live encounters with patients diagnosed with such. Nurses who have experience of more than 2 years particularly in cardiac care and telemetry units tended to ace a remarkable high score (in knowledge scale) than those who were in their earlier years (Willette et al., 2007).

Table 18. Relationship between years of experience as staff and knowledge level of respondents using chi-square test

		Score		Total
		Average (14-26)	Excellent (27-40)	
Years of Experience	6 months	1	3	4
	1 year	6	3	9
	2 years	4	5	9
	3 years	3	0	3
	5 years	1	0	1
	7 years	1	1	2
	9 years	1	0	1
	10 years	0	1	1
		17	13	30
Likelihood Ratio	Value 9.960	df 7	Asymptotic Significance (2- sided)	.191

The table provided information how the knowledge of nurses regarding heart failure has been statistically associated with their respective years of stay as a staff nurse in the institution. With the data presented, the two (2) factors have not shared any significant relationship with each other with p value of 0.19 ($p < 0.05$). Schallmo et al. (2018) emphasized that inadequate knowledge or even substantial experience particularly in heart failure necessitating a palliative care could pose a resistance to the delivery of care. However, having their years of experience could not embark definitively of how they were knowledgeable in the pursuits of heart failure care as this

could be explained that varieties of their area of assignment in certain wards other than specialty or cardiovascular units when nurses have been required to undergo 6-month rotation to several areas as form of employment requirement as a staff nurse, could partake relative exposure to diverse medical cases not only limiting to heart failure.

Table 19. Relationship between no. of heart failure patients handled and knowledge level of respondents using chi-square test

		Score		Total
		Average (14-26)	Excellent (27-40)	
No. of patients	1-3 patients	3	3	6
	4-6 patients	4	2	6
	6-9 patients	2	5	7
	More than 9	8	3	11
		17	13	30
Likelihood Ratio	Value 3.831 df 3	Asymptotic Significance (2-sided)		.281

In this table, it was evident with the p value of 0.28 that the nurses' level of knowledge has no significant relationship with the no. of patients diagnosed with heart failure they have cared for a month. Wherein, the matter between the quantity where their service has been dedicated was not considered as a key factor to the quality of the care provision in terms of knowledge. Nurses from the ICU and wards reported differences in the no. of cases that their area usually catered in a month but has not painstakingly affected their level of knowledge towards the disease but having an adequate training and seminar could contribute in such like an educational program as seen in the pre-test and post-test scores.

E. Relationship between demographic profile of respondents to their level of attitude

Table 20. Relationship between age of respondents and their attitude level using chi-square test

	Score	Total
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		Disagree	Moderately Agree	Strongly Agree	
Age	21 years old	1	0	0	1
	23 years old	1	0	0	1
	25 years old	1	1	0	2
	26 years old	1	0	0	1
	27 years old	0	1	1	2
	28 years old	1	4	1	6
	29 years old	2	3	0	5
	30 years old	3	3	0	6
	31 years old	1	0	0	1
	32 years old	1	1	0	2
	33 years old	0	1	0	1
	34 years old	1	0	0	1
	35 years old	0	1	0	1
	Total	13	15	2	30
Likelihood Ratio		Value 19.59	df 24	Asymptotic Significance (2-sided)	.720

This was evident as shown in the table that age of nurses and attitude level are not statistically significantly related with each other with p value of 0.72 ($p < 0.05$). The level of maturity in terms of age could not therefore describe the manner of nurses on how they feel in conducting management to their patients especially those with heart failure.

Table 21. Relationship between gender of respondents and their attitude level using chi-square test

		Score			Total
		Agree	Moderately Agree	Strongly Agree	
Gender	Male	4	4	2	10
	Female	9	11	0	20
	Total	13	15	2	30
Likelihood Ratio		Value 4.75	df 2	Asymptotic Significance (2-sided)	.7093

The table revealed the association of nurses' gender to their relative behavior in which does not partake statistical relationship (p value of 0.71, $p < 0.05$). The immense value of p could exhibit that they are far related and cannot dictate the behavior that is necessitated in times of caring patients with heart failure. In the contrary, it was believed that gender has an influence on caring behaviors due to masculinity and caring concepts that male and female nurses differs. (Lee, et. al., 2010).

Table 22. Relationship between area assignment and attitude level of respondents using chi-square test

	Score	Total
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		Disagree	Moderately Agree	Strongly Agree	
Area	Intensive Care Unit	9	9	1	19
	Medicine Ward	3	2	1	6
	Geriatric Ward	1	4	0	5
Likelihood Ratio		Value 3.440	df 4	Asymptotic Significance (2-sided)	.487

There was no significant relationship with p value 0.487 ($p < 0.05$) between the nurses' area of assignment to their level of attitude in heart failure. At this circumstance, it was valuable to emphasize that the admission rates could vary to different medical cases since ICU have been catering general cases and Medicine and Geriatric Ward comprised of various internal medicine cases particularly stroke and diabetes mellitus, and hence not be assured entirely for heart failure. With this, their degree of behavior in caring and teaching patients with such disease was not relatively tantamount to what area or unit do they render their nursing service.

Table 23. Relationship between years of experience in the area and attitude level using chi-square test

		Score			Total
		Agree	Moderately Agree	Strongly Agree	
Years	6 months	1	3	0	4
	1 year	4	5	2	11
	2 years	5	3	0	8
	3 years	3	2	0	5
	5 years	0	1	0	1
	7 years	0	1	0	1
	Total	13	15	2	30
Likelihood Ratio		Value 8.759	df 10	Asymptotic Significance (2-sided)	.555

In this table, it showed the correlation on the length of experience of nurses assigned in their respective areas to the way of how they deal with their patients particularly with heart failure. At $p < 0.05$, it stated that the years of experience being in the area was not statistically significant related (p value of 0.55) to the attitude of nurses in caring with heart failure patients, which also was previously reported in the study of Sanad (2017). This can be attributed that both ICU and wards catered admission of general

cases under the service of Internal Medicine, and yet not only dedicated for heart failure cases.

Table 24. Relationship between years being staff nurse and attitude level of respondents using chi-square test

		Score			Total
		Agree	Moderately Agree	Strongly Agree	
Years	6 months	1	2	1	4
	1 year	3	5	1	9
	2 years	5	4	0	9
	3 years	2	1	0	3
	5 years	1	0	0	1
	7 years	0	2	0	2
	9 years	1	0	0	1
	10 years	0	1	0	1
	Total	13	15	2	30
Likelihood Ratio Value 12.003 df 14		Asymptotic Significance (2-sided)			0.606

relationship between the two mentioned factors (p value of 0.61). One probable reason that can be evoked in this finding was that the no. of years of experience may be bountiful in caring for patients who have various illnesses, hence was not limited only for patients with heart failure since nurses are subjected to several rotations in different wards prior to landing in specialty areas particularly cardiovascular units.

Table 25. Relationship between no. of heart failure patients handled by respondents and their attitude level

		Score			Total
		Agree	Moderately Agree	Strongly Agree	
No. of patients	1-3 patients	0	6	0	6
	4-6 patients	4	1	1	6
	6-9 patients	1	5	1	7
	More than 9	8	3	0	11
	Total	13	15	2	30
Likelihood Ratio Value 18.919 df 6		Asymptotic Significance (2-sided)			0.004

At $p < 0.05$, it was evident that it has significant relationship (p value of 0.00) that nurses tend to have substantial attitude on managing these patients upon having the experience on caring for them respective of the no. of cases. On the other note,

this was a different finding compare to the level of knowledge of nurses where no correlation was found. But this was a good indicator that nurses perceived themselves with a behavior intended to foster care as it was believed that the quality of nursing care delivered was initially influenced by the personal behavioral outlook of nurses (Agustinus, 2011).

F. Relationship between knowledge level and attitude level of respondents towards heart failure discharge teaching

Table 26. Relationship between knowledge scores and attitude level of respondents

		Knowledge Score	Attitude Level
Knowledge Score	Pearson Correlation	1	.207
	Significance (2-tailed)		.273
	N	30	30
Attitude Level	Pearson Correlation	.207	1
	Significance (2-tailed)	.273	
	N	30	30

The table presented the relationship of knowledge and attitude of nurses regarding discharge teaching on heart failure that was measured generally on two (2) phases. In lieu in caring for patients with heart failure, it was therefore evident that the two factors describing the competencies of nurses especially assigned in medical units, knowledge and attitude, have no significant relationship in between measured through Pearson R Correlation test (p value of 0.27, $p < 0.05$), as in dire measured with the aid of a teaching program. On the contrary, in the aspect of palliative care, Barrett et al. (2015) concluded that when a nurse has greater knowledge, he/she may tend to project positive attitudes towards rendering care for dying patients. Sundell & Ea (2018) also have seen the importance of conducting a teaching intervention in augmenting the aspect of knowledge in heart failure which will further lead to better outcomes such as improved patient education and decreased readmission rates among patients with the said disease. Competency of nurses and quality of care given to the patients have remarkable relationship with each other (Riley et al., 2015). But in

this state, it was necessary to explore for the factors why nurses did not exhibit at par level of knowledge and how they perceived themselves in rendering care to patients with heart failure.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

SUMMARY

Being a cross-sectional, quasi-experimental, one group pre-test-post-test design, this research study was motivated in the scope of heart failure care and management in the line of nursing profession. Its aim was determining the difference of knowledge and attitude of nurses assigned in three (3) medical units: Intensive Care Unit, Medicine Ward and Geriatric Ward under the two circumstance: before and after they were necessitated to undergo a 60-minute nursing educational program about heart failure.

Under the purposive sampling technique, a total of 30 staff nurses from Ospital ng Makati were deemed as respondents (19 ICU nurses, 6 Medicine Ward nurses and 5 Geriatric Ward nurses) also subsequently being scrutinized with sets of criteria relating to their area of assignment, years of experience, status of their employment and position.

Each respondent was invited to attend an educational program that was facilitated by the principal investigator after the instructional design was approved by the institution's Research Development Innovation as well as Ethical Review Board and Nursing Division. It was a 3-time session wherein each was intentionally scheduled with their monthly meeting (February 2020) and attended by nurses grouped according to their respective areas, and who has initially consented for data gathering and has subsequently answered the pre-teaching tools. Meanwhile, this

study has adapted tools: 40-item “*Nurses’ Knowledge on Management of Heart Failure*” questionnaire by Al-chaim & Hamza (2016) and 18-item “*Nurses’ Attitude Towards Management of Patients with Heart Failure*” scale by Sanad (2017), wherein nurses were asked to complete both within 30-45 minutes during the pre- and post-teaching phase. Initially, the study conducted a pilot testing from 10 nurses randomly selected from each area and has attained a Cronbach alpha score of 0.74.

The characteristics of respondents varied, as there were female nurses than male, who belonged to the age group of 21-35 years old. Majority has been a BS Nursing graduate and yet only one (1) has managed to complete post-graduate studies in nursing. Most of them were being employed as staff nurse in the institution for about 2-3 years. Intensive Care Unit nurses were assessed to be more experienced in terms of years as majority of them were being assigned to that area for a most of 3-5 years. In terms of patient care, majority of nurses have reported that they recalled caring for more than 9 patients diagnosed with heart failure within a month.

In terms of status of their knowledge regarding heart failure, in the pre-teaching phase, most nurses have weak level of knowledge pertaining risk factor, mobility, sexual restrictions, and medications, but have performed great on the items relating to clinical presentation of patients with heart failure and cardiovascular physiology. After the teaching program, nurses have demonstrated improvement as item regarding risk factor of the disease were answered by all correctly. Sixty-five (65) percent of the items have recorded significant increase in points after nurses attended the program. In an average, nurses have attained an increase of at least 2-3 points in the knowledge scale with the aid of teaching program.

In terms of attitude, most of the nurses have reported strong agreement on the statements pertaining to effect of nursing care to physical and mental health,

importance of health education, and moderate disagreement on the beliefs about explaining nursing procedures as useless, negative impact of ICU admission to mental health, the influence of awareness of patient to their level of difficulty communicating with them, depression as an adverse effect of caring patients with heart failure.

Lastly, as all the factors were statistically correlated, it was noted that age, gender, area of assignment, and years of being employed did not exhibit statistical relationship to knowledge and attitude level of nurses. Meanwhile, nurses who have substantial years of experience while in their area has remarkable relationship to their level of knowledge in heart failure. Also, the same goes between the no. of heart failure patients cared to the nurses' attitude presentations.

Conclusions

Based on the findings drawn in this study, it is hereby concluded that:

1. Prior to attending the 60-minute program, it was noted that nurses have performed weak on the aspect of intervention modalities of in caring for patients with heart failure as described in the scale but have demonstrated great knowledge on the matters about cardiovascular anatomy and physiological processes and signs and symptoms of heart failure.
2. Nurses have exemplary understanding on cardiac conduction processes which has the highest change in score after the program, but contrary to the query about the definition of cardiac output with the tallied highest negative change.
3. With the aid of teaching program, there was a significant improvement of scores in the 40-item knowledge scale with a mean increase of 2-3 points per item from the pre-teaching phase.
4. After the teaching program, aspects of assessment, diagnostic modalities, intervention outlines, discharge instructions and evaluation of patients with heart

failure have presented relative improvements in terms of positive change in score (6-14%).

5. In terms of attitude, after the program, there was a significant change of the view of the nurses relating to the instance that the patients tend to be easily dealt with if he/she has not been fully aware of own's disease from being moderately disagreed to agree with the scenario; however constantly moderately agreed to the importance of a cardiac nurse to be consistently be trained while rendering a duty to the respective area of assignment.
6. There was a significant difference between the pre-teaching and post-teaching scores of the nurses assigned in the medical units and has attended the nursing program about heart failure.
7. There was a significant relationship obtained between the nurses' level of experience in terms of years rendering service to their respective area of assignment to their knowledge pertaining specifically to heart failure.
8. There was a significant relationship as how many patients with heart failure did a nurse handled in a 4-week duration and their ability to partake emotional stance or attitude during the course of care with these patients.
9. There was no significant relationship between the level of knowledge and attitude of nurses assigned in medical units in regards to dealing with patients with heart failure.

Recommendations

The study evokes the following recommendations:

1. As motivated by the improvements in the performance of nurses in terms of their knowledge, nurses have confided mastery and relative experiences in caring with heart failure patients. Therefore, in order to continue attaining self-efficacy among

respective nurses in ICU and wards, nursing administrators must therefore dedicate in further promotion of nursing opportunities as guided opportunities in guidance with social persuasion with utilization of technological advancements and assessing the physical and emotional states of their nurses that influences their delivery of nursing care. Nonetheless, this can be gained through pursuing constant scheduling of an educational program particularly those assigned in specialty units considering the admission rates of cases which was a consistent trend in the institution. There were also verbal reports of encouragement from nurses whom have attended the program and imbibed the positive effects of it in their competencies as they feel more readied and enthusiastic in sharing what they learn to their admitted patients which improved their emotional state as a person.

2. Integration of self-care principles for patients with heart failure was also seen as a factor that needs to be improved that thereby needs to be included in the future educational program, which can yield enhanced benefits for patients since their nurses were more aware of their condition with the improved level of knowledge and attitude.
3. Considering the 0% attrition rate, still the sample of this study (n=30) was relatively low and may partake issue of generalizability of results. Therefore, it was recommended to pursue this study with higher no. of respondents.
4. It was also recommended to pursue a study that yield a follow up from this research study to endow an investigation on the long-term effect of a previously conducted educational program in terms of knowledge retention or changes in attitude to provide bold evidence of its effectiveness.
5. Enrollment of the educational program to the roster of Continuing Professional Education for incurring CPD units not only as this will invite more nurses (not

limiting for potential respondents), but also to formalize the instructional design and strengthening its learning objectives.

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Appendix A

Approved Letters



UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

Office of the Vice Chancellor for Academic Affairs

28 March 2019

ASST. PROF. QUEENIE RIDULME

Program Chair
Master of Arts in Nursing
Faculty of Management and Development Studies
UP Open University
Los Baños, Laguna

Dear Asst. Prof. Ridulme:

The UPOU Research and Publications Committee as per the endorsement of Ms. Ma. Cecilia Punzalan and Dr. Josephine Agapito who served as Ethical Reviewers for the thesis proposal of one UPOU Master of Arts in Nursing student whose name is indicated below is recommending the following action:

Zharmaine C. Sanchez: "Education Intervention on Knowledge and Skills in Discharge Teaching of Heart Failure and Self-care among Medical Nurses in a Tertiary Hospital"

ACTION: Passed the ethical review and can proceed with her research but have to revise according to the comments made by the reviewers

May we request you to disseminate the said information to the concerned student.

Thank you.

Truly yours,

MELINDA F. LUMANTA

Vice Chancellor and
Chair, Research and Publications Committee

OVC/AA, Los Baños, Laguna – Tel. No. (049)536-6001 to 06 local 300-301; Telfax No. 536-6014
ovcaa@upou.edu.ph - www.upou.edu.ph



OSPITAL NG MAKATI

Division of Research Development and Innovation

6th Floor, Sampaguita Street Barangay Pembo, Makati City 1218
Tel. No. (632)88826316 local 303/ Fax No. (632)88810983

20 January 2020

ZHARMAINE C. SANCHEZ, RN
Nursing Service Division

Study Title: *"Effects of Education Intervention on Knowledge and Attitude in Heart Failure Discharge Teaching among Staff Nurses in a Tertiary Hospital in Makati City"*

RDI Reference Code: *R2019-043*

Re: *Technical Review Approval*

Dear Ms. Sanchez,

I would like to inform you that your research protocol has been technically reviewed and approved by the Division of Research Development and Innovations.

Please submit this approval letter together with your protocol-related documents to Ospital ng Makati Research Ethics Board (OMREB) for ethics review.

You are also required to submit the study report after completion of your research work.

Sincerely,

Rosa Allyn G. Sy, MD
Director
Division of Research Development and Innovations



OSPITAL NG MAKATI

Sampaguita corner Gumamela Sts., Brgy. Pembo, Makati City, Philippines
Tel. +632 882 6816 to 36

PhilHealth Accredited



OSPITAL NG MAKATI RESEARCH ETHICS BOARD

January 21, 2020

MS. ZHARMAINE C. SANCHEZ
University of the Philippines
Open University

Dear Ms. Sanchez,

This to inform you that your Thesis entitled **"Effects of Education Intervention on Knowledge and Attitude in Heart Failure Discharge Teaching among Staff Nurses in a Tertiary Hospital in Makati City"**, has been approved by the Ospital Ng Makati Research Ethics Board (OMREB), on January 21, 2020.

Sincerely yours,

Rowella Y. Magbitang, RN, MSN
Primary Reviewer
Nursing Service Division

Jonathan Japes G. Bernardo, MD
Chairman
Ospital Ng Makati Research Ethics Board (OMREB)

OnMail-OMREB-SD-LH

Appendix B
Electronic Mail Correspondence (Tool Adaptation)



UNIVERSITY
OF THE
PHILIPPINES

Zharmaine Sanchez <zcsanchez@up.edu.ph>

Tool Adaptation

10 messages

Zharmaine Sanchez <zcsanchez@up.edu.ph> Wed, Oct 23, 2019 at 7:17 PM
To: muhammedh.alhjem@uokufa.edu.iq

Dear Sir,

This is to formally write about my humble intention to adapt the tool you utilized in your study entitled, " Effectiveness of educational program on nurse's knowledge about management of patients with heart failure"

published in October 2016. The said survey has been appropriate to my research study entitled: "Effectiveness of Discharge Teaching on Heart Failure regarding Knowledge and Skills among Medical Nurses in a Tertiary Hospital in Makati City, Philippines", as a requirement for the completion of the Masters' Degree of the undersigned in the aforementioned university.

The general objective of this study is to measure the knowledge and attitude of nurses assigned in Intensive Care Unit and Medicine and Geriatric Wards about principles of heart failure management to patients upon discharge as intervened with an in-service nursing education program. The tool will be helpful in the effective undertaking of this research study as the items stipulated in the survey are accurate enough to measure the level of knowledge of nurses about key information heart failure care.

Whereas, I am humbly seeking your approval as the principal investigator of the survey to adapt the said tool which will properly cited throughout the study.

Thank you so much! Hoping for your positive response regarding this matter.

Respectfully yours,

Zharmaine Sanchez, RN

Manila, Philippines
zcsanchez@up.edu.ph

muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Thu, Oct 24, 2019
at 12:05 AM

.Acknowledged

في الأربعاء، 23 أكتوبر 2019 في 2:18 م تمت كتابة ما يلي بواسطة Zharmaine Sanchez
:<zcsanchez@up.edu.ph>

[Quoted text hidden]

muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Thu, Oct 24, 2019
at 12:09 AM

thank

في الأربعاء، 23 أكتوبر 2019 في 7:05 م تمت كتابة ما يلي بواسطة muhammed hakem
:<muhammedh.alhjem@uokufa.edu.iq> shemran hasen alhjem Hakim

[Quoted text hidden]



Appendix F Questionnaire.doc
72K

Zharmaine Sanchez <zcsanchez@up.edu.ph> Thu, Oct 24, 2019 at 5:32 AM
To: muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>

Thank you so much Sir!
I hope this email finds you well too, and wish you the very best in all of your
endeavors!

Zharmaine Sanchez, RN
[Quoted text hidden]

muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Tue, Oct 29, 2019
at 6:00 PM

!Thank you

Ap

في الخميس، 24 أكتوبر 2019 في 12:32 ص تمت كتابة ما يلي بواسطة Zharmaine Sanchez
<zcsanchez@up.edu.ph>

[Quoted text hidden]

Zharmaine Sanchez <zcsanchez@up.edu.ph> Wed, Jan 29, 2020 at 12:05 PM
To: muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>

Hi Sir!

This is in correspondence regarding my intention to adapt your tool. Actually, I am in the process of collecting data and administering questionnaires. May I just have a copy of the correct answers?

Sorry for the inconvenience.
This is really a big help for me.

Thank you!

Zharmaine
[Quoted text hidden]

muhammed hakem shemran hasen alhjem Hakim Wed, Jan 29, 2020
<muhammedh.alhjem@uokufa.edu.iq> at 11:40 PM
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Sure, no problem.
I hope you do not forget to mention my name as acitation

في الأربعاء، 29 يناير 2020 في 7:05 ص تمت كتابة ما يلي بواسطة Zharmaine Sanchez
<zcsanchez@up.edu.ph>

[Quoted text hidden]

 **appendix C- Questionnaire-final - Copy.doc**
106K

muhammed hakem shemran hasen alhjem Hakim Wed, Jan 29, 2020
<muhammedh.alhjem@uokufa.edu.iq> at 11:42 PM
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Correct answer in bold choice

في الأربعاء، 29 يناير 2020 في 6:40 م تمت كتابة ما يلي بواسطة muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>

[Quoted text hidden]

Zharmaine Sanchez <zcsanchez@up.edu.ph> Wed, Jan 29, 2020 at 11:53 PM
To: muhammed hakem shemran hasen alhjem Hakim
<muhammedh.alhjem@uokufa.edu.iq>

Dear Sir,

Yes po, all throughout the study as well as on the questionnaires , it was properly citated. In the tool, your name is solely indicated as the author of the tool.

Thank you again for allowing me to do adapt your tool. It is really a big help.

Thank you,

Zharmaine

[Quoted text hidden]

muhammed hakem shemran hasen alhjem Hakim Wed, Jan 29, 2020
<muhammedh.alhjem@uokufa.edu.iq> at 11:56 PM
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

You are wellcom

في الأربعاء، 29 يناير 2020 في 6:53 م تمت كتابة ما يلي بواسطة Zharmaine Sanchez
:<zcsanchez@up.edu.ph>

[Quoted text hidden]

Tool Adaptation

5 messages

Zhairmaine Sanchez <zcsanchez@up.edu.ph>
To: hsanad@uob.edu.bh

Tue, Oct 1, 2019 at 2:59 PM

Dear Mr. Hala Mohamed Sanad,

I am Zhairmaine C. Sanchez, a Masters of Arts in Nursing student at University of Philippines Open University. I am currently completing my thesis work entitled, "Effects of Discharge Teaching on Heart Failure on the Knowledge and Attitude of Staff Nurses in Medical Units of a Tertiary Care Hospital in Makati City, Philippines".

Wherein, in the pursuit of reviewing studies related to mine, I have found a substantial tool that you have utilized in one of your studies entitled, "**Nurses' Knowledge and Attitude towards management of patients with heart failure**". The only difference of this study to mine is the utilization of education program that will measure this two competency levels pre and post teaching.

This, as it was published online in the Journal of Advanced Pharmacy Education and Research by SPER Publication in 2017, will be helpful in measuring the objectives in my study and thereafter benefiting further our cardiac patients as through improving their health literacy as delivered substantially by nursing professionals.

In lieu with this, I am humbly requesting to you for allowing me to adapt the tool as it was originally used in your study. Rest assured that it will be duly cited on all aspects of the proposed study, and be used in accordance with each research objective.

Hoping to hear from you soon! I also hoped that this mail finds you well!

Thank you very much!

Zhairmaine C. Sanchez, RN
ICU Nurse/MAN student
Hospital ng Makati/UP-Open University

Zhairmaine Sanchez <zcsanchez@up.edu.ph>
To: hsanad@uob.edu.bh

Sun, Oct 6, 2019 at 8:49 PM

[Quoted text hidden]
[Quoted text hidden]

Zhairmaine Sanchez <zcsanchez@up.edu.ph>
To: "Dr. HALA MOHAMED SANAD" <hsanad@uob.edu.bh>

Sun, Oct 13, 2019 at 4:00 PM

Good day Dr. Sanad!

May I just ask if where can I get the tool for assessing the knowledge of nurses on heart failure management? I have copied the tool for the attitude scale here in this link: <https://paper.in/storage/models/article/6oCpmwDkEJQCS8yrWgx6OBQf1DHfMHyqNsoZaQAHLGECOGVWwYmXG9T0aj3/nurses-knowledge-and-attitude-towards-management-of-patients-with-heart-failure.pdf> but have not seen entirely of the knowledge scale.

Sorry for disturbing you!

Thank you so much for the help!

Much gratitude,

Zharmaine C. Sanchez, RN

[Quoted text hidden]

Dr. HALA MOHAMED SANAD <hsanad@uob.edu.bh>
To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Sun, Oct 13, 2019 at 5:53 PM

Dear Ms. Zharmaine,

I would like to inform you that I had a virus attacked my computer two years ago and I lost all my data that time. unfortunately, I don't have soft/hard copy of the tool. What you can get what is published online.

Sorry for inconvenient

Wish you all the best

Dr. Hala Mohamed Sanad

Assistant Professor, Fellow HBA

College of Health Sciences

University of Bahrain



P.O. Box 32038, Kingdom of Bahrain

Courier Address: Southern Governorate, Zallaq Road, UOB Sakhiir Campus

Office: +973 17435891

Fax: +97317231876

Email: hsanad@uob.edu.bh

www.uob.edu.bh



[Quoted text hidden]

Zharmaine Sanchez <zcsanchez@up.edu.ph>
To: "Dr. HALA MOHAMED SANAD" <hsanad@uob.edu.bh>

Sun, Oct 13, 2019 at 9:23 PM

Dear Dr. Sanad,

I understand. I'll try to look for it well on online databases.

Thank you so much!

Zharmaine Sanchez

[Quoted text hidden]

2 attachments



image001.jpg
3K



image002.jpg
70K



Re: Tool Adaptation

4 messages

Dr. HALA MOHAMED SANAD

<hsanad@uob.edu.bh>

Sun, Oct 6, 2019 at 9:45

PM

To: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Dear Zharmaine,

Hope this email finds you well and in good spirit.

Sure you can use the tool I developed in my research study titled "Nurses' Knowledge and Attitude towards management of patients with heart failure". Wish you all the best in your thesis.

Regards,

Dr. Hala Sanad

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: Zharmaine Sanchez <zcsanchez@up.edu.ph>

Date: 10/6/19 15:48 (GMT+03:00)

To: "Dr. HALA MOHAMED SANAD" <hsanad@uob.edu.bh>

Subject: Re: Tool Adaptation

Dear Mr. Hala Mohamed Sanad,

I am Zharmaine C. Sanchez, a Masters of Arts in Nursing student at University of Philippines Open University. I am currently completing my thesis work entitled, "Effects of Discharge Teaching on Heart Failure on the Knowledge and Attitude of Staff Nurses in Medical Units of a Tertiary Care Hospital in Makati City, Philippines".

Wherein, in the pursuit of reviewing studies related to mine, I have found a substantial tool that you have utilized in one of your studies entitled, "**Nurses' Knowledge and Attitude towards management of patients with heart failure**". The only difference of this study to mine is the utilization of

cited on all aspects of the proposed study, and be used in accordance with each research objective.

Hoping to hear from you soon! I also hoped that this mail finds you well!

Thank you very much!

Zharmaine C. Sanchez, RN
ICU Nurse/MAN student
Ospital ng Makati/UP-Open University

Zharmaine Sanchez <zcsanchez@up.edu.ph> Mon, Oct 7, 2019 at 5:16 AM
To: "Dr. HALA MOHAMED SANAD" <hsanad@uob.edu.bh>

Dear Dr. Sanad,

It is a pleasure to hear from you and conferred my humble intention!

Rest assured properly citation of your work will be entirely included in my paper!

Thank you so much!

Respectfully yours,
Zharmaine Sanchez, RN
[Quoted text hidden]

Zharmaine Sanchez <zcsanchez@up.edu.ph> Wed, Oct 9, 2019 at 12:47 PM
To: "Dr. HALA MOHAMED SANAD" <hsanad@uob.edu.bh>

Good day, Dr. Sanad,

May I just ask if where can I get the tool for assessing the knowledge of nurses on heart failure management? I have copied the tool for the attitude scale here in this link: <https://japer.in/storage/models/article/6oCpmwDkEJQCS8yrWgx6OBQf1DHfMHyqNsoZaQAHLGECOGVWWyMxG9T0aj3/nurses-knowledge-and-attitude-towards-management-of-patients-with-heart-failure.pdf> but have not seen entirely of the knowledge scale.

Sorry for disturbing you!

Thank you so much for the help!

Much gratitude,

education program that will measure this two competency levels pre and post teaching.

This, as it was published online in the Journal of Advanced Pharmacy Education and Research by SPER Publication in 2017, will be helpful in measuring the objectives in my study and thereafter benefiting further our cardiac patients as through improving their health literacy as delivered substantially by nursing professionals.

In lieu with this, I am humbly requesting to you for allowing me to adapt the tool as it was originally used in your study. Rest assured that it will be duly cited on all aspects of the proposed study, and be used in accordance with each research objective.

Hoping to hear from you soon! I also hoped that this mail finds you well!

Thank you very much!

Zharmaine C. Sanchez, RN
ICU Nurse/MAN student
Hospital ng Makati/UP-Open University

On Tue, Oct 1, 2019, 2:59 PM Zharmaine Sanchez
<zcsanchez@up.edu.ph> wrote:

Dear Mr. Hala Mohamed Sanad,

I am Zharmaine C. Sanchez, a Masters of Arts in Nursing student at University of Philippines Open University. I am currently completing my thesis work entitled, "Effects of Discharge Teaching on Heart Failure on the Knowledge and Attitude of Staff Nurses in Medical Units of a Tertiary Care Hospital in Makati City, Philippines".

Wherein, in the pursuit of reviewing studies related to mine, I have found a substantial tool that you have utilized in one of your studies entitled, **"Nurses' Knowledge and Attitude towards management of patients with heart failure"**. The only difference of this study to mine is the utilization of education program that will measure this two competency levels pre and post teaching.

This, as it was published online in the Journal of Advanced Pharmacy Education and Research by SPER Publication in 2017, will be helpful in measuring the objectives in my study and thereafter benefiting further our cardiac patients as through improving their health literacy as delivered substantially by nursing professionals.

In lieu with this, I am humbly requesting to you for allowing me to adapt the tool as it was originally used in your study. Rest assured that it will be duly

Appendix C

Letter of Intent



UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

FACULTY OF MANAGEMENT AND DEVELOPMENT STUDIES

Masters of Arts in Nursing

October 14, 2019

DR. VERGEL P. BINAY, MD, FPCS, FPSGS, MBAH
Medical Director
Hospital ng Makati

Dear Dr. Binay,

This is to formally write about my humble intention to administer my proposed research study entitled: *"Effects of Discharge Teaching on Heart Failure regarding Knowledge and Attitude among Staff Nurses in a Tertiary Hospital in Makati City"*, as a requirement for the completion of the Masters' Degree of the undersigned in the aforementioned university.

Currently, I am also assigned as a staff nurse in Intensive Care Unit in this institution, which has set me motivation in writing this study as ICU nurses together with Medicine and Geriatric Ward nurses will be the principle respondents.

The general objective of this study is to measure the knowledge and attitude of nurses assigned in Intensive Care Unit and Medicine and Geriatric Wards about principles of heart failure management to patients upon discharge as intervened with an in-service nursing education program.

Whereas, I am humbly seeking your approval as the principal investigator to allow me to undergo the study in terms of data collection. It is aimed that the hospital will benefit from this study with the perceived aim of establishing awareness about nurses' competencies on discharge teaching for patients with heart failure. This initial evaluation will trigger the nurses to adapt and perform effective discharge teaching about heart failure management by increased knowledge and improved attitude gained through the in-service education program that will support the nurses in their performance of their teacher role in the clinical nursing practice. Nonetheless, there are previous studies that stipulate the importance of effective discharge teaching to alleviate possible hospital readmission rates among these patients, hence it is sought that it is a substantial research undertaking.

Attached herein is the proposal previously conferred as passed by the faculty as well as the ERB results deliberated by the university board.

Your positive response will be highly acknowledged and appreciated. My deepest gratitude!

Respectfully yours,

ZHARMAINE C. SANCHEZ, RN
zcsanchez@up.edu.ph



UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

FACULTY OF MANAGEMENT AND DEVELOPMENT STUDIES

Masters of Arts in Nursing

January 27, 2020

MARIFE P. CABURIAN, RN

Unit Manager
Intensive Care Unit

Dear Ma'am,

This is to formally write about my humble intention to administer my proposed research study entitled: "*Effects of Education Intervention on Knowledge and Attitude in Heart Failure Discharge Teaching among Staff Nurses in a Tertiary Hospital in Makati City*", as a requirement for the completion of the Masters' Degree of the undersigned in the aforementioned university. I am also assigned currently as a staff nurse in Intensive Care Unit in this institution.

The general objective of this study is to measure the knowledge and attitude of nurses assigned in Intensive Care Unit and Medicine and Geriatric Wards about principles of heart failure management to patients upon discharge as intervened with an in-service nursing education program.

Whereas, I am humbly seeking your approval to allow me as the principal investigator to undergo the study in terms of data collection among the nurses assigned in ICU. It is aimed that the hospital will benefit from this study with the perceived aim of establishing awareness about nurses' competencies on discharge teaching for patients with heart failure. This initial evaluation will trigger the nurses to adapt and perform effective discharge teaching about heart failure management by increased knowledge and improved attitude gained through the in-service education program that will support the nurses in their performance of their teacher role in the clinical nursing practice. The participation of respective staff nurses will be greatly valued to the success of this paper.

Nonetheless, the proposal was granted approved from UPOU Research and Publications Committee, as well as from OsMak Research Development Innovation and Research Ethics Board.

Your positive response will be highly acknowledged and appreciated.

My deepest gratitude!

Respectfully yours,

ZHARMAINE C. SANCHEZ, RN

zcsanchez@up.edu.ph



UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

FACULTY OF MANAGEMENT AND DEVELOPMENT STUDIES

Masters of Arts in Nursing

January 27, 2020

IRENE MANGAHAS, RN
Unit Manager
Medicine Ward

Dear Ma'am,

This is to formally write about my humble intention to administer my proposed research study entitled: "*Effects of Education Intervention on Knowledge and Attitude in Heart Failure Discharge Teaching among Staff Nurses in a Tertiary Hospital in Makati City*", as a requirement for the completion of the Masters' Degree of the undersigned in the aforementioned university. I am also assigned currently as a staff nurse in Intensive Care Unit in this institution.

The general objective of this study is to measure the knowledge and attitude of nurses assigned in Intensive Care Unit and Medicine and Geriatric Wards about principles of heart failure management to patients upon discharge as intervened with an in-service nursing education program.

Whereas, I am humbly seeking your approval to allow me as the principal investigator to undergo the study in terms of data collection among the nurses assigned in Medicine Ward. It is aimed that the hospital will benefit from this study with the perceived aim of establishing awareness about nurses' competencies on discharge teaching for patients with heart failure. This initial evaluation will trigger the nurses to adapt and perform effective discharge teaching about heart failure management by increased knowledge and improved attitude gained through the in-service education program that will support the nurses in their performance of their teacher role in the clinical nursing practice. The participation of respective staff nurses will be greatly valued to the success of this paper.

Nonetheless, the proposal was granted approved from UPOU Research and Publications Committee, as well as from OsMak Research Development Innovation and Research Ethics Board.

Your positive response will be highly acknowledged and appreciated.

My deepest gratitude!

Respectfully yours,

ZHARMAINE C. SANCHEZ, RN
zcsanchez@up.edu.ph



UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

FACULTY OF MANAGEMENT AND DEVELOPMENT STUDIES

Masters of Arts in Nursing

January 27, 2020

DOYLE ROY MARTIN, RN

Unit Manager
Geriatric Ward

Dear Sir,

This is to formally write about my humble intention to administer my proposed research study entitled: *"Effects of Education Intervention on Knowledge and Attitude in Heart Failure Discharge Teaching among Staff Nurses in a Tertiary Hospital in Makati City"*, as a requirement for the completion of the Masters' Degree of the undersigned in the aforementioned university. I am also assigned currently as a staff nurse in Intensive Care Unit in this institution.

The general objective of this study is to measure the knowledge and attitude of nurses assigned in Intensive Care Unit and Medicine and Geriatric Wards about principles of heart failure management to patients upon discharge as intervened with an in-service nursing education program.

Whereas, I am humbly seeking your approval to allow me as the principal investigator to undergo the study in terms of data collection among the nurses assigned in Geriatric Ward. It is aimed that the hospital will benefit from this study with the perceived aim of establishing awareness about nurses' competencies on discharge teaching for patients with heart failure. This initial evaluation will trigger the nurses to adapt and perform effective discharge teaching about heart failure management by increased knowledge and improved attitude gained through the in-service education program that will support the nurses in their performance of their teacher role in the clinical nursing practice. The participation of respective staff nurses will be greatly valued to the success of this paper.

Nonetheless, the proposal was granted approved from UPOU Research and Publications Committee, as well as from OsMak Research Development Innovation and Research Ethics Board.

Your positive response will be highly acknowledged and appreciated.

My deepest gratitude!

Respectfully yours,

ZHARMAINE C. SANCHEZ, RN

zcsanchez@up.edu.ph

Appendix D

Participant's Informed Consent Form



UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

FACULTY OF MANAGEMENT AND DEVELOPMENT STUDIES
Masters of Arts in Nursing

PARTICIPANT'S INFORMED CONSENT FORM

January 2020

Good day!

The undersigned is currently working on a research study entitled,

"Effects of Education Intervention on Knowledge and Attitude in Heart Failure Discharge Teaching among Staff Nurses in a Tertiary Hospital in Makati City."

This is in pursuit as a thesis requirement for the completion of Master's Degree in the aforementioned university.

Wherein, this study aims to measure the differences on the knowledge and attitude of nurses assigned in Intensive Care Unit and Medicine and Geriatric Wards about principles of heart failure management to patients upon discharge as intervened with an in-service nursing education program. Your participation will generally include the following:

- a. Answering the 3 prescribed tools (Demographic Profile, Nurses' Knowledge Tool and Nurses' Attitude Scale; the latter are adapted and modified)
- b. Participation in in-service education program as arranged and scheduled with respective unit managers

More so, this study will thereby ask you to rate in terms of self-assessment on your knowledge and attitude in carrying out discharge teaching to patients with heart failure, as further deemed with an education program. Previously, this has undergone Technical Review (RDI) from the institution as well as Ethical Review (OmREB) both from the institution and university that all has granted approval.

The proposed benefits of the study will entail the nurses as well as the patient, wherein identifying initially their knowledge and attitude will certainly explores factors on their practices of teaching discharged patients with heart failure that will be addressed through reorientation of information on heart failure management by an educational program.

Confidentiality of answers and shared information on this research study will be uphold throughout the data collection and publication process. This is voluntary, however, should you wish to refuse or withdraw your participation in any time of the study, this will be urgently addressed and highly respected. Should there be any questions, you may contact the investigator at

My deepest gratitude!

Respectfully yours,

Zharmaine C. Sanchez, RN
zcsanchez@up.edu.ph

Appendix E

Instructional Design

UNIVERSITY OF THE PHILIPPINES OPEN UNIVERSITY
FACULTY OF MANAGEMENT AND DEVELOPMENT AND STUDIES
MASTER OF ARTS IN NURSING

Program Course/Title		In-Service Nursing Education Program on Heart Failure Management for Discharge Teaching "Puso sa Isip: Damdamin at Kaalaman"			
Description of the Program Course		To impart key points/information about heart failure necessary for nurses, shared through a nursing education program to Medical nurses.			
Venue		Ospital ng Makati-Conference Room, 6th floor			
Participants/Learners		Nurses assigned in Intensive Care Unit, Medicine and Geriatric Wards			
Learning Outcomes	Time	Content/Concept/Topic	Resources/Materials	Teaching Learning Activity	Evaluation/Assessment
				Didactics/Classroom	Didactics/Classroom
1. State the salient feature or clinical assessments of Heart Failure patients.	10 mins	Cardiac Anatomy Definition Morbidity Cases Physical Assessments/ Symptomatology	Laptop LCD Projector Pencil and Paper	Classroom based discussion on heart failure key points based on Assessment, Diagnosis, Planning, Intervention and Evaluation.	Open Forum/Live Feedback (right after the program)
2. State the criteria in the diagnosis of Heart Failure (Medical and Nursing).	10 mins	Clinical Presentation of patients Staging/ Classification Nursing Problems			
3. Discuss the management on heart failure	20 mins	Medical Management (Pharmacological, Diet, Exercise) Nursing Responsibilities			
4. Explain the interventional guidelines on discharge teaching in terms of instructions and principles of self-care	15 mins	Discharge Instructions in Heart Failure management (Joint Commission Guidelines) Self-Care Heart Failure Index Self-Care Principles (American College of Cardiology 2017)		Discussion on research findings on Joint Commission Guidelines on Discharge Instructions as per evidence-based standpoint.	Administration of tool of "Effectiveness of educational program on nurse's knowledge about management of patients with heart failure"
5. Describe one evaluation technique in teaching patients	10 mins	"Teach Back Technique"		Play video presentations about Teach Back Technique	

Appendix F

Research Tools

I. Demographic Tool

Instruction: Please provide the tag in the upper box in the form of the following: 1) area of assignment (I-Intensive Care Unit, M-Medicine Ward, G-Geriatric Ward, 2) time of research study (01-pre-teaching, 02-teaching, 03-post-teaching) and 3) 1st letter of the middle name together with the 1st letter of their birth month. For example: I01CA

Kindly check the box corresponding to your answer.

Age: _____

Gender: ☐ Male ☐ Female

Area of Assignment ☐ Intensive care Unit ☐ Medical Ward ☐ Geriatric Ward

Years of Experience in the Area: _____ Years of Experience as Staff Nurse in the hospital: _____

Highest Educational Degree ☐ BS Nursing ☐ Masters of Arts in Nursing ☐ Masters of Science in Nursing

How many patients with Heart Failure do you care in a month?

☐ 1-3 patients ☐ 4-6 patients ☐ 6-9 patients ☐ more than 9

II. "Nurses' Knowledge on Management of Heart Failure Questionnaire" (Adapted)

Mohammed Hakim Sharan Al-Hchaim & Rajha Abdul Hassan Hamza. (October 2016)

Instruction: Please write the letter corresponding your choice of answer beside the no. of each statement indicating to measure your level of knowledge regarding heart failure management

1. Heart is a muscular organ with four cavities which located in:
 - a. The left area of the lungs
 - b. The upper right corner of the chest cavity
 - c. The central area between the lungs
 - d. The upper left area of the chest cavity
2. Muscular wall of the heart has three layers. And the inner layer of the heart called:
 - a. Endocardium b. Epicardium c. Heart muscle d. Pericardium
3. The heart consists of four chambers and the _____ is the strongest chamber in the heart:
 - a. Right atrium b. Left atrium c. Right ventricle d. Left ventricle
4. The heart receive blood through the coronary arteries, which inturn get the blood through:
 - a. Pulmonary artery b. Aortic artery c. Carotid artery d. Superior mesenteric artery
5. The real size of heart stroke could be measured by which of the following formula:
 - a. The difference between the End Diastolic Volume and the remaining amount of blood in the ventricle size
 - b. Total End Diastolic Volume and the remaining amount of blood in the ventricle
 - c. The amount of blood that is thrust from the left ventricle during contraction
 - d. The remaining amount of blood from the blood between each contraction and relaxation of the heart muscle
6. Heart beat generated by:
 - a. Atrioventricular node b. SA node c. His-Purkinje System d. Contractile Apparatus
7. Multiplying heart rate in stroke volume represents:
 - a. Ejection Fraction b. Higher size c. Cardiac Output d. End Diastolic Volume
8. The bicuspid and tricuspid valve are:
 - a. Lunar and coronary valves c. Atrioventricular valve
 - b. Coronary and aortic valve d. Aortic and pulmonary valve
9. Aortic artery arch sent blood directly to:
 - a. The femoral artery b. The main left coronary artery c. Hepatic artery d. Pulmonary artery
10. The sac membrane that surround the heart is called:
 - a. Pleurisy membrane b. Pericardium membrane c. Peritoneal membrane d. Talon membrane
11. Pericardial sac membrane composed of:
 - a. One layer b. Two layers c. Three layers d. Four layers
12. A group of cells in the upper part of the right atrium, natural origin normal electrical impulse
 - a. Sinoatrial node b. Lymph nodes c. Atrioventricular node d. Sinoatrial ventricular node
13. The normal rate of heart beating is _____ times / minute a. 90 b. 80 c. 70 d. 60

38. Heart failure patients are advised to:

- a. Stops working or main activity after the disease completely
- b. Back to work or main activity after the disease completely
- c. Back to work or main activity with little effort
- d. Postpones return to work or the main activity for some time

39. Heart failure patient should be _____ to use of oral medications and injections to help local erection

- a. Prevented to some extent
- b. Strictly prohibited
- c. Allows for limited degree
- d. Allowed without condition

40. Patients with HF are advised to take the Diuretic medication

- a. At night
- b. At morning
- c. When the BP fail
- d. When have a sense of urinary retention

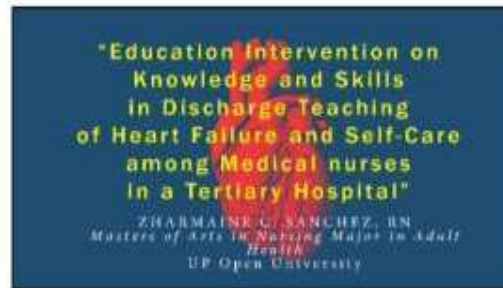
**III. "Nurses' Attitude towards management of patients with Heart Failure Scale" Adapted
Hala Mohamed Sanad (2017)**

Instruction: Please put a / mark on the space corresponding your choice of answer on each statement indicating to measure your level of skill on how you teach patient with each self-care practice to do when discharged from the hospital.

1- Strongly disagree 2- Disagree 3- Agree 4-Moderately agree 5- Strongly agree

STATEMENTS	1 SD	2 D	3 A	4 MD	5 SA
1. I feel that the nursing care for the client has a direct effect on the patient's physical and mental health.					
2. I believe that preventing noise around the client plays an effective role in the progress of the heart condition.					
3. I feel that setting a nursing plan for the client can protect from noise and reduce sleep disturbances thus speeding up the recovery.					
4. I think explaining the client's condition to his/her family may lead to speed up the client adaptation to his/her condition.					
5. I think the client's behavior and the degree of adaptation depend on his/her social and educational level.					
6. I think the client feels secure in the medical units when the medical team members are by his/her side all the time.					
7. I believe that health education is important to the client.					
8. I think encouraging the client to speak about his/her fears is important to control it.					
9. I think it is important to train the cardiac nurse before and during duty to be able to raise her performance level.					
10. I believe it is important that all staff in the medical units should work as a team to raise the level of their performance.					
11. I think that explaining the nursing procedures to the client is boring and useless.					
12. I think placing the client in the intensive care room has a negative effect on his/her mental health.					
13. I think discussing the client's condition in front of him/her may lead to increase his/her anxiety.					
14. I think that a client who has no idea about his/her illness is easy to deal with.					
15. I feel the more the client is aware of the nature of their illness, the more difficult it will be to deal with them.					
16. I feel bored when I listen to the client's complaints because he/she is always complaining and asking the same questions every day.					
17. I feel depressed as a result of dealing with the client with heart failure.					
18. I believe any qualified nurse can work in Cardiac Care units.					

14. The preparing the discharge plan by the nurse consider _____
a. Appropriate b. Not appropriate c. Less benefit d. Aggravate the patient's safety
15. The normal rate of sinoatrial node in adult is _____ beat / minute
a. 70-90 b. 50-70 c. 80-120 d. 60-100
16. The rate of beats in the atrioventricular node is _____ beat / minute
a. 40-60 b. 10-50 c. 50-60 d. 60-80
17. Intellectual or mental stress, tobacco, coffee and alcohol lead to _____ heart rate.
a. Regular b. Slow c. Acceleration d. Irregular
18. One of the causes of heart failure is:
a. Bronchial asthma b. Liver necrosis c. Myocardial infarction d. Esophageal varices
19. The one of the risk factors that leading to heart failure is
a. Smoking and alcohol b. Walking and jogging c. Eating and drinking d. Sleep and lethargy
20. _____ is considered from the common signs and symptoms of heart failure
a. Nausea and cough b. Vomiting and diarrhea c. Headaches d. Abdominal pain
21. Reduction of renal perfusion due to heart failure leads to the release of _____ hormone by the kidneys
a. Oxytocin b. Thyroxin c. Renin d. Erythropoietin
22. _____ is considered as one of the complications of heart failure
a. Hemorrhage b. Kidney failure c. Low adrenaline level d. High cholesterol
23. Patient with heart failure will be advised with:
a. Walking for more one hour a day b. Bed rest for long periods c. Perform a heavy exercise
d. Perform exercise for short intervals
24. The right Position for the patient with HF is:
a. Raise the feet side of the bed b. Raise the head side of the bed
c. Lying on the right side d. Lying on the left side
25. Patient with HF is advised to:
a. Reduce the physical work and fitness b. Simple exercises gradually increased over several weeks
c. Keep with a constant level of activity d. Don't make any physical activity
26. Dietary restrictions for patients with heart failure are:
a. Do not add salt and fat to foods b. Drink tea and coffee
c. Do not eat foods containing fiber d. Do not eat sweets and pastries
27. In case of weight gain of more than one kilogram during one day, this mean:
a. The body needs electrolytes b. Heart failure become more worse
c. Anemia d. The treatment becomes useless
28. When the patient feels the start of deterioration and weakness in the leg or the lack of daily activity, then he/she must:
a. Reduces daily activity b. Report to the doctor
c. Take an extra dose of therapy d. Perform exercises to strength the legs
29. There is a correlation between _____ with an increased risk of myocardial infarction and sudden death:
a. Perform home activities b. Lack in performing exercise
c. Lethargy and inactivity d. Practicing strong physical exercise
30. It will be better to perform moderate-intensity activity at least _____ in most days of the week
a. 30 minutes b. 50 minutes c. 70 minutes d. 90 minutes
31. It will be preferred to perform exercise _____ times a week
a. 9 b. 7 c. 5 d. 3
32. Physical training in rehabilitation sessions must be completed within _____, with the inclusion of the warm-up and cool down sessions
a. One hour b. Two hours c. Three hours d. Four hours
33. Static isometric exercises such as weightlifting and hand loads is with _____ than aerobic exercise such as jogging, swimming for heart failure patients:
a. Less benefit b. More benefit c. Similar d. Hardest
34. To prevent low blood pressure immediately after strong exercise, patient is advised
a. To sit down to rest b. Lie down and raise the head
c. Lie down and lifting of the feet d. Walking for a short time
35. Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is _____ for patient with heart failure from
a. Prevented b. Advised c. Reduced d. Increased
36. Patients with heart failure controlled can eat _____ of sodium per day
a. less than 2-3 grams b. 70-80 grams c. 7-8 mg d. 0.7-0.8 grams
37. _____ leads to HF: a. Kidney failure b. Liver Cirrhosis c. Obesity d. Varicose feet





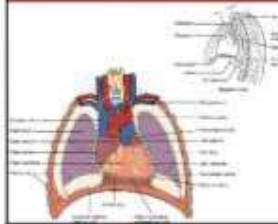
OBJECTIVES	
	1. State the salient feature or clinical assessments of Heart Failure patients.
	2. State the criteria in the diagnosis of Heart Failure (Medical and Nursing).
	3. Discuss the management on heart failure

OBJECTIVES	
	4. Present the discharge criteria for patients with Heart Failure
	5. Explain the interventional guidelines on discharge teaching in terms of instructions and principles of self-care
	6. Describe one evaluation technique in teaching patients

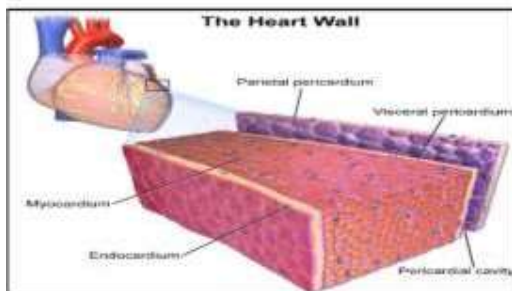
Assessments

4. Present the discharge criteria for patients with Heart Failure
5. Explain the interventional guidelines on discharge teaching in terms of instructions and principles of self-care
6. Describe one evaluation technique in teaching patients

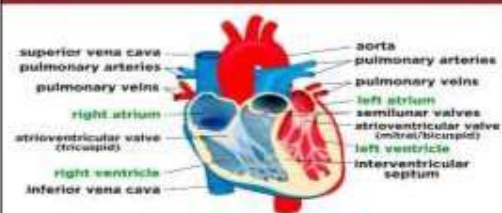
Assessment: Anatomy of the Heart

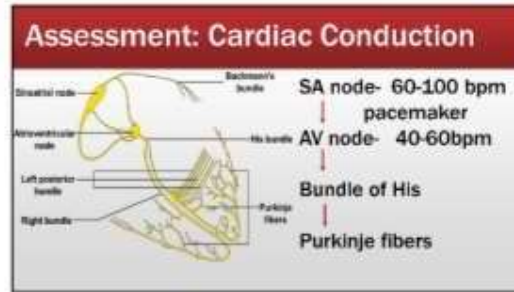
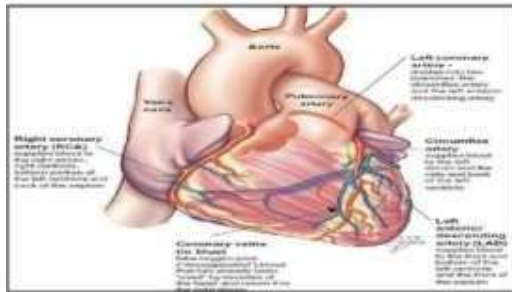


Heart, about a size of the fist is guarded within the thoracic cavity, medially between the lungs superseded in a spaced called mediastinum (Lumenlearning, nd).



Assessment: Physiology of the Heart





Diagnosis

HEART FAILURE
 -a clinical syndrome that includes constellation of **clinical symptoms (dyspnea and fatigue)** and **signs (edema and rales)** that lead to **frequent hospitalization, poor quality of life and a shortened life expectancy** (Aherrera, et. al, 2015)

Diagnosis

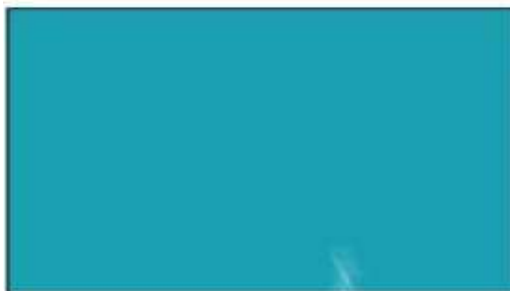
HEART FAILURE
 -"Pagpalya ng puso"
 -the end result of a variety of diseases (Balabagno, 2017)

Diagnosis
HEART FAILURE CASES Geriatric Ward: 2018: 32 patients 2019: 31 patients Source: HIMS & Admitting Logbook

Diagnosis
Source: HFSA, 2010 RISKS OF HEART FAILURE *Hypertension *Diabetes *Obesity *Coronary Artery Disease (after MI, revascularization) *Peripheral arterial disease or CVD

Diagnosis
Source: HFSA, 2010 RISKS OF HEART FAILURE *Valvular Heart Disease *Family history of cardiomyopathy *Exposure to cardiac toxins *Sleep-disordered breathing

Diagnosis: Heart Failure Classification		
Source: Aberrera, 2015		
A. Based on Function/Ejection Fraction		
TYPE	EJECTION FRACTION	EXAMPLES
Systolic Heart Failure or HF with reduced EF (HFrEF)	Depressed EF <40%	Coronary Artery Disease (MI), Dilated Cardiomyopathy, Valvular Heart Disease
Diastolic Heart Failure or HF with preserved EF (HFpEF)	Preserved EF $\geq$ 40-50%	Pathologic hypertrophy, Aging, Fibrosis, Restrictive cardiomyopathy
High Output Failure	Normal at first, then may decrease	Thyrotoxicosis, Beriberi, Chronic Anemia, Systemic



Diagnosis: Heart Failure Classification		
Source: Aherrera, 2015		
B. ACC/AHA Stages of HF		
Stages	Description	EXAMPLES
A	At risk for HF but without structural heart disease for HF symptoms	HTN, CAD, DM or patients using cardiotoxic or with family history of cardiomyopathy
B	Structural heart disease but without signs of HF	Previous MI, LV systolic dysfunction or asymptomatic valvular disease
C	Structural heart disease with previous or current symptoms of HF	Has structural heart disease with shortness of breath, fatigue, reduced exercise tolerance
D	Refractory HF needing specialized interventions	With marked symptoms at rest despite of maximal therapy

Diagnosis	
Killip vs NYHA	
KILLIP	NYHA
ACUTE MYOCARDIAL INFARCTION TO HEART FAILURE	HEART FAILURE
RISK STRATIFICATION	FUNCTIONAL LIMITATIONS
4 CLASSES	4 CATEGORIES
IRREVERSIBLE	REVERSIBLE

Diagnosis	
Killip vs NYHA	
KILLIP	NYHA
ACUTE MYOCARDIAL INFARCTION TO HEART FAILURE	HEART FAILURE
RISK STRATIFICATION	FUNCTIONAL LIMITATIONS
4 CLASSES	4 CATEGORIES
IRREVERSIBLE	REVERSIBLE

Diagnosis: KILLIP CLASSIFICATION Source: Cardiology Review		
Class	Description	Assessment
Class I	No evidence of heart failure	
Class II	Presence of mild to moderate heart failure	S3 gallop, decreased half-way up lung fields, elevated jugular venous pressure
Class III	Pulmonary edema	
Class IV	Cardiogenic Shock	SBP <90, signs of hypoperfusion such as oliguria, cyanosis and sweating

Diagnosis: NYHA CLASSIFICATION Source: Joint Commission Manual		
Class	Description	Assessment
Class I	No symptoms/limitation in ordinary physical activity	Can climb >1-2 flights of stairs with ease
Class II	Mild symptoms	Mild shortness of breath and/or angina and slight limitation during ordinary activity; 2 flights but with diff
Class III	Marked limitation in activity even during less than ordinary activity	Working short distances (20-100 m), comfortable only at rest; <1-2 flights of stairs
Class IV	Extreme limitation	Unable to leave bed



Diagnosis Source: American Heart Association	
Because of the inability of the heart to pump blood:	
- Heart tends to enlarge (contraction) - Heart tends to increase in muscle mass - Heart tends to pump faster (cardiac output)	
$\text{stroke volume} \times \text{heart rate}$	
$\text{End-systolic volume} - \text{end diastolic volume}$	

Diagnosis

Source: American Heart Association

Because of the failure of the heart to pump blood:

- Heart tends to hypertrophy (enlarge)
- Heart tends to increase muscle mass
- Heart tends to decrease cardiac output

Compensatory mechanisms fail

Diagnosis

Source: HFSA, 2010

CHARACTERISTICS OF ACUTE DECOMPENSATED HEART FAILURE

- Worsening renal function
- Persistent neurohormonal activation
- Progressive deterioration in myocardial function

Diagnosis

Source: International Journal of Nephrology, 2011

The Effect on Kidneys

Decreased Cardiac Output	Reduced effective arterial filling volume (EAFV)	Decreased Renal Perfusion
Sodium and Water Retention	Activation of Renin-Angiotensin-Aldosterone System	Vasoconstriction

Diagnosis

Source: Aherrera, 2015

Diagnostic Tests:

- *2D Echocardiography with doppler- most useful, determines ejection fraction
- *12 L ECG
- *Chest Radiography- determines size and shape
- * Cardiac biomarkers- BNP- sensitive marker of HF; expected to increase along with age and renal dysfunction

Diagnosis
Source: Aherrera, 2015
Laboratory Tests:
*CBC
*Serum electrolytes
*FBS
*Lipid Profile
*FT4, TSH

Diagnosis
Source: HFSA, 2010
Signs of Heart Failure
A. Elevated Cardiac Filling Pressures and Fluid Overload
- Elevated JVP, S3 gallop, rales, hepatojugular reflux, ascites, edema
B. Cardiac Enlargement
- Laterally displaced or prominent apical impulse, murmurs

Diagnosis
Source: HFSA, 2010
Signs of Heart Failure
C. Reduced Cardiac output
- narrow pulse pressure, cool extremities, tachycardia with pulsus alterans
D. Arrhythmia
-Irregular pulse (Afib)

Planning
DISCHARGE CRITERIA FOR PATIENTS WITH HEART FAILURE

Planning:
Assessed for:
-Exacerbating factors
-Volume status
Checked for:
-Oral diuretics
-ACE inhibitor and beta blocker response
-Left ventricular ejection fraction

Planning
Assist for:
-Patient/Family education
-Smoking cessation counselling
-Follow up clinic visit scheduling (7-10 days)

Planning
r w d t r t?
• Discharge : not a one-time process (AHRQ)
starts from admission all the way to hospitalization to discharge or followup care

Planning
r w d t r t?
* Preparing for discharge is suitable which needs assessment of social environment as well as capacity to self-care (Riley, 2015)

Planning

* In a randomized controlled trial (233 patients with hospitalized HF patients: pre discharge teaching conducted for 1 hour by a nurse educator has seen improved clinical outcome and reduced cost of care (HFSA, 2010)

Intervention

JOINT COMMISSION GUIDELINES
ON DISCHARGE INSTRUCTIONS
FOR HEART FAILURE PATIENTS

Intervention: JCO Guidelines

All discharge instructions must include the following information:

Intervention: JCO Guidelines

1. ACTIVITY LEVEL
2. DIET
3. DISCHARGE MEDICATIONS
4. WEIGHT MONITORING
5. FOLLOWUP APPOINTMENTS
6. PROCEDURES TO FOLLOW IF SYMPTOMS WORSEN

Intervention: JCO Guidelines
 Source: Specifications Manual for Joint Commission National Quality Core Measures 2010)

1. ACTIVITY LEVEL
 Examples:

*Activity as tolerated	*Regular activity
*Cardiac rehab	*Regular walking
*Exercise instructions	*Rest
*No strenuous activity	*Restrict activity
*Physical therapy	

Intervention: Heart Failure Guidelines



The screenshot shows the HFSA website with a navigation menu on the left and a list of clinical practice guidelines on the right. The guidelines include topics like 'Diagnosis and Management of Heart Failure', 'Prevention of Heart Failure', and 'Management of Heart Failure with Preserved Ejection Fraction'.

Intervention: Heart Failure Society of America Guidelines
 Source: Journal of Cardiac Failure, 2010

ACTIVITY LEVEL: EXERCISE

- *Initial step: Exercise testing (No arrhythmia or ischemia) → exercise training
- * Expectation: Heart rate range, appropriate level of exercise training

Intervention: Heart Failure Society of America Guidelines
 Source: Journal of Cardiac Failure, 2010

ACTIVITY LEVEL: EXERCISE

- *General exercise goal: 30 minutes of moderate activity/exercise (aerobic such as walking, swimming, jogging etc)
 5 days a week with warm up and cool down exercises

IN A SUPERVISED SETTING

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

ACTIVITY LEVEL: EXERCISE

*Not recommended to the ff patients:

- Left ventricle systolic dysfunction
- Had undergone a major cardiovascular event or procedure for the last 6 weeks
- has cardiac devices
- with arrhythmia or ischemia noted upon baseline cardiovascular testing

Intervention: Heart Failure Society of America Guidelines
Source: Harvard Medical School, 2009

ACTIVITY LEVEL: EXERCISE

- Static isometric exercises: clasping hands together or weight lifting is discouraged due to:
 - anaerobic exercise
 - short term dramatic increase in blood pressure

Intervention
Source: American Heart Association, 2015

ACTIVITY LEVEL: WHEN TO RESUME ACTIVITY

*Common advise: 2 weeks to 3 months (depends on the severity)

*Rest is important

*Sexual activity can be resumed after few weeks (as advised)

Intervention: Heart Failure Society of America Guidelines
Source: American Heart Association, 2017

DIETARY RESTRICTION

*Recommended: fruits, vegetables, whole grains, low-fat dairy products, skinless poultry and fish, nuts, legumes and non-tropical vegetable oils

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

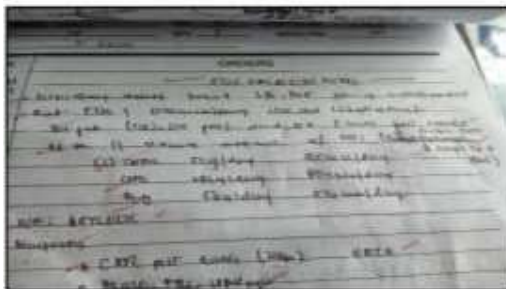
DIETARY RESTRICTION: SODIUM INTAKE

- *Intended for ALL patients with heart failure
- Patients with co-morbidities such as Diabetes, Dyslipidemia or severe Obesity – specific dietary instructions
- *Recommended: fruits, vegetables, whole grains, low-fat dairy products, skinless poultry and fish, nuts, legumes and non-tropical vegetable oils

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: SODIUM INTAKE

- *2-3 grams DAILY (for patients with clinical syndrome of heart failure and preserved or depressed left ventricular ejection fraction (LVEF)
- * <2 grams DAILY (for patients with moderate to severe heart failure)
- 2 grams = 0.46 teaspoon



Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: SODIUM INTAKE

- *the term "LOW SODIUM" or "NO ADDED SALT" DIET is 4 grams sodium (American Heart Association)
- 4 grams = 0.93 teaspoon

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: SODIUM INTAKE
*the term "LOW SODIUM" or "NO ADDED SALT" DIET is 4 grams sodium (American Heart Association)

4 grams = 0.93 teaspoon

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: SODIUM INTAKE

- X** ask patients to follow a low salt diet
- ✓** advise them to not add salt to food at their tables or while cooking (since 70% of daily sodium intake – processed and pre-packaged foods)

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: FLUID INTAKE
*DAILY restriction is >2 liters a day (patients with severe hyponatremia/ has symptoms of fluid retention)

2 liters a day = 6-9 cups a day

Intervention: Heart Failure Society of America Guidelines
Source: Medline Plus, 2018

DIETARY RESTRICTION: FLUID INTAKE

- X** ask patients to limit fluids
- ✓** advise them to whenever feeling thirsty:
chew gum, rinse mouth with cold water and spit out/ suck a hard candy or slice of lemon or small piece of ice

SALT INTAKE greatly affects **FLUID INTAKE**

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: NUTRITIONAL SUPPLEMENTS

* Naturoceutical use is not recommended for the relief of HF symptoms or for the secondary prevention of cardiovascular events.

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: NUTRITIONAL SUPPLEMENTS

* Natural or synthetic catecholamine-like products containing ephedra (ma huang), ephedrine metabolites or imported Chinese herbs are contraindicated to patients with heart failure.

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010



Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010

DIETARY RESTRICTION: NUTRITIONAL SUPPLEMENTS

* Products including garlic, ginkgo biloba and ginseng have antiplatelet effects and can potentially interact with anticoagulant medications.

Intervention: Heart Failure Society of America Guidelines
Source: Journal of Cardiac Failure, 2010



Intervention: American Heart Association
Source: White, et. al., 2014

DISCHARGE MEDICATIONS
*The following are medications that help improve the quality of life

MEDICATIONS	EXAMPLES	WHAT TO MONITOR
Angiotensin converting enzymes (ACE)inhibitors	Captopril, Enalapril, Benazepril, Lisinopril, Quinapril, Ramipril	Potassium, blood pressure, cough, dizziness, rash or swelling

Intervention: American Heart Association
Source: White, et. al., 2014

MEDICATIONS	EXAMPLES	WHAT TO MONITOR
Angiotensin receptor blocker (ARB)	Candesartan, Losartan, Valsartan	Potassium, blood pressure, dizziness
Beta blockers	Carvedilol, Metoprolol succinate, Bisoprolol	Blood pressure, heart rate, worsening fatigue
Aldosterone inhibitors	Spirolactone, Eplerenone	Potassium, possible breast tenderness

Intervention: American Heart Association
Source: White, et. al., 2014

MEDICATIONS	EXAMPLES	WHAT TO MONITOR
Hydralazine/ isosorbide	ISDN, Hydralazine combination	Blood pressure, headache, dizziness or nausea
Diuretics	Furosemide, Torsemide, Bumetanide, Metolazone, HCTZ	Potassium, sodium, fluid loss, dizziness
Digitalis	Digoxin	Digoxin level

Intervention: Heart Failure Society of America Guidelines
 Source: Journal of Cardiac Failure, 2010

- **DIURETICS**- loop diuretics have relatively short half-life, therefore sodium reabsorption is likely once concentration of the drug declines in the renal tubules. Better to take in the morning because of its expected effect of increased in urination.
- It is important to strictly limit sodium intake while on diuresis.

Intervention: Heart Failure Society of America Guidelines
 Source: Journal of Cardiac Failure, 2010

WEIGHT MONITORING

- *Ensure to measure weight before discharge to yield as a baseline.
- * When to measure: **DAILY**. Preferably after voiding in the morning
- * Sign of worsening HF: A weight gain of 2-3 pounds in a 24-hour period or more than 5 pounds in a week (American Heart Association)

Intervention

PROCEDURES TO FOLLOW IF SYMPTOMS WORSEN

Self-Check Plan for HF Management

Excellent - Keep Up the Good Work!

- 1. Take medications as directed
- 2. Monitor weight daily
- 3. Monitor symptoms
- 4. Follow diet and fluid restrictions
- 5. Exercise as directed

SAFETY: Call your doctor if you experience any of the following:

- Swelling in legs, feet, or abdomen
- Shortness of breath
- Rapid weight gain
- Dizziness or lightheadedness
- Fatigue or weakness

Pay Attention - Use Caution!

- 1. Take medications as directed
- 2. Monitor weight daily
- 3. Monitor symptoms
- 4. Follow diet and fluid restrictions
- 5. Exercise as directed

CHECK UP: Your symptoms may be getting worse.

Medical Alert - Warning!

- 1. Take medications as directed
- 2. Monitor weight daily
- 3. Monitor symptoms
- 4. Follow diet and fluid restrictions
- 5. Exercise as directed

WARNING! You need to be evaluated right away.

Call your physician or call 911

Appendix G

CURRICULUM VITAE

ZHARMAINE C. SANCHEZ, RN

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zcsanchez@up.edu.ph



Objective: To impart my knowledge and skills within the scope of health and nursing practice as a clinical nurse practitioner.

Basic Information

Age: 26 yrs. old
Birthdate: August 16, 1993
Birthplace: Makati City
Religion: Roman Catholic
Height: 5'7"

Educational Background

	School and Year	Achievements Earned
Graduate Studies	University of the Philippines Open University Master of Arts in Nursing Major in Adult Health A.Y. 2016 to present	
Tertiary	University of Makati Bachelor of Science in Nursing A.Y. 2009-2013	Cum Laude
Secondary	Benigno "Ninoy" S. Aquino High School S.Y. 2006-2009	Graduate
Primary	Pembo Elementary School S.Y. 1999-2006	Graduate

Special Citations

- Champion - Ospital ng Makati-Interdepartmental Quiz Bee for Diabetes and Nutrition (August 2019)
- 2nd Place - Ospital ng Makati-Infection Prevention Committee Knockouts Quiz Bee (October 2018)
- 50th ANSAP Annual Convention Research Poster Award (March 2017)

Research Title: "Seniority Complexes affecting Millennial Nurses' management in role leadership perspective in a tertiary government hospital"

- Perfect Attendance Award – Ospital ng Makati (2016)

Achievements Earned

- | | |
|---|----------------|
| • University of Makati
COAHS Academic Scholar | A.Y. 2009-2013 |
| • Commission on Higher Education
(CHED)
Congressional Scholar | A.Y. 2011-2013 |
| • Caritas Manila
YSLEP Scholar | A.Y. 2011-2013 |

Seminars/Special Trainings Attended

- Cardinal Principles of Stroke Treatment Seminar - Stroke Society of the Philippines
September 13, 2019, Philippine Heart Center
- 50th ANSAP Annual Convention
March 17, 2017, Association of Nursing Administrators of the Philippines
- Dialysis Training
January 13, 2014 to February 14, 2014, B. Braun Avitum Philippines (Taguig City) and East Avenue Medical Center

Work Experience

- Ospital ng Makati (Pembo, Makati City)
Medicine Staff Nurse - September 15, 2015 to September 17, 2016
ICU Staff Nurse - September 18, 2016 to present
- University of Perpetual Help - Dr. Jose G. Tamayo Medical Center
(Binan, Laguna)
General Staff Nurse - Dec. 5, 2014 to June 5, 2015
- East Avenue Medical Center (Quezon City)
Volunteer Dialysis Nurse - Feb. 14, 2014 to March 14, 2014

Organizational Memberships

- UMak Alumni Scholars' Society - Appointed President (2013-2017)
- Mater Dolorosa Parish Commission on Social Communications and Mass Media - Commissioner

Philippine NLE Board Rating: 79.60