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*"Towards Better Things"*

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**AD MELIORA,** the annually published official faculty research journal of the University of the Assumption, is a compendium of peer-reviewed interdisciplinary research papers. Articles are accepted to the Journal by the Board of Reviewers using the double-blind refereeing scheme.

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# Foreword

Research publication consists of submitting, peer-reviewing, and disseminating scholarly studies, important for advancement in the academe and scientific communication. Faculty members in a higher education institution such as the University of the Assumption periodically produce research outputs though journal publication to share findings to readers. Research publication is also a crucial requirement of accrediting bodies to universities and other academic institutions.

Faculty research in the University of the Assumption (UA) is anchored by the four major research agenda namely: **research of mission, obligation, opportunity and interest**. For the 13th edition of AdMeliora, the official UA faculty research journal, all of the seven studies are institutional and funded research, hence, they are all research of obligation.

***Prototype development in the irrigation, drainage and drying of wounds*** *by* Emmanuel M. Bagtas, Marvin O. Mallari, Edwin D. Torres, Anele C. Mallari, Cherry B. Lazatin, Edrian T. Sitchon and Neil C. Tanquilut is research of obligation. This study presents the development of a multi-functional wound cleaning prototype designed to assist in the irrigation, drainage, and drying of wounds. The device aims to enhance wound care efficiency by integrating these three essential processes into one hygienic, cost-effective system that supports nurses and healthcare professionals.

***Analgesic Activity of Cananga odorata (Lam.) Hook. F & Thomson leaves decoction*** by Melanie O. Junio, Justin M. Gonzales and Menchu C. Luzano is research of obligation. This experimental study aims to assess the analgesic activity of fresh and dried Cananga odorata (Ilang-ilang) leaves decoctions, FCOLD and DCOLD, respectively, in female albino mice.

***Clergy expectations and commitments: Results and analysis of the 2017 domus pastorum survey*** by John Denver A. Desolo is research of obligation. This survey study was conducted among select clergy of the Archdiocese of San Fernando in 2017 whose result paved the way for the formulation of the vision and mission statement of the said institution.

***Impact of housekeeping extension program to Aeta Senior High School of Villa Maria Integrated School, Porac, Pampanga*** by Jovie D. Bondoc, Jona-Liza T. Cruz and Mercedes M. Lopez is research of obligation. This study aimed to identify the impact and effectiveness of the Housekeeping Extension Program to Aeta Senior High School students.

***UA community engagements during the COVID-19 pandemic*** by Marissa Y. Figueroa and Fernando M. Lopena Jr. is research of obligation. This study focused on UA's best practices for community engagement during the COVID-19 pandemic for the school years 2020-2021 and 2021-2022.

**Demographic correlates of depression among community-dwelling adults in Pampanga** by Noli D. Franco, Edna R. Calma, Angienette C. Evangelista, Maria Heidi P. Arconado and Arnel T. Sicat is research of obligation. This study examined the association between demographic factors and depression among community-dwelling adults in selected municipalities and cities in Pampanga.

***The library that cares: How librarians provide mental health support to students and teachers in Pampanga*** by Roilingel P. Calilung is research of obligation. This exploratory study examined how academic libraries in Pampanga supported student mental health and well-being before and during the COVID-19 pandemic.

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# Prototype development in the irrigation, drainage, and drying of wounds

*Emmanuel M. Bagtas, Marvin O. Mallari, Edwin D. Torres, Anele C. Mallari, Cherry B. Lazatin, Edrian T. Sitchon & Neil C. Tanquilut*

**ABSTRACT**

*This study presents the development of a multi-functional wound cleaning prototype designed to assist in the irrigation, drainage, and drying of wounds. The device aims to enhance wound care efficiency by integrating these three essential processes into one hygienic, cost-effective system that supports nurses and healthcare professionals.*

*Using the Agile development model, the prototype was designed and refined through iterative stages of hardware integration, programming, and animal experimentation. Testing conducted on rabbits compared the new device with the conventional syringe method. Results showed a higher rate of wound retraction and smaller wound diameters with the prototype, indicating potential for faster wound healing and improved management. Although statistical variations were minimal, the device demonstrated comparable performance to traditional methods while offering enhanced safety and convenience.*

*This research concludes that the developed wound cleaning device can improve clinical efficiency, promote hygiene, and reduce the workload of healthcare providers. With further refinement and human trials, the technology can be implemented globally, especially in low and middle income healthcare settings as an accessible, affordable and effective innovation in wound care.*

**Key words:** *biomedical device, global health innovation, nursing technology, prototype development, wound healing, wound management*

## INTRODUCTION

Wounds represent a rising healthcare predicament in the world population (Zarchi et al, 2014). Every year, there are more than 2.8 million clients with chronic and difficult wounds (Schuster, Moradzadeh & Waxman, 2006). In 2010, the U.S. annual wound care total expense is worth a staggering $15.3 billion (Sen & Roy, 2012).

Wounds are breaches of the epidermal layer of the skin (McFarland & Smith, 2014). These are types of injuries that may also break other body tissues. They may be caused by accidents, falls and hits. Wounds may also be the effects of chronic or post-surgeries, depending on the duration of their healing. These cause morbidities, complications and even mortalities. They are often associated with emotional and social impairments which can be detrimental to significant negative impact on the quality of life.

With these relevant statistical data, a prototype gadget was developed in the irrigation, drainage and drying of wounds. This is included in the priority areas, specifically the hospital equipment and biomedical devices of the PCHRD-DOST Health Research Agenda. Its main significance is to produce a reasonably-priced, sterile and reliable hospital device.

The wound cleaning device will assist nurses in the irrigation, drainage and drying process. Irrigation is significant in preventing potential infections. The device would be utilized for the administration of sodium hypochlorite solution (Dakin’s solution) during wound care. Drainage is essential in drawing-off fluids from a wound. This can be achieved through the process of suction causing fluids to adhere to a surface. Lastly, drying is also important in removing water from the wound. All of these steps will facilitate faster wound healing, a vital component of wound management.

## Literature review

Wound healing is an intricate process where the integumentary system, specifically the skin, repairs itself after injury (Nguyen et al, 2009).It is affected by the causes of the wound and associated therapies utilized (Harvey, 2005). Hess (2005) as cited in Harvey (2005) identifies a cascade with hemostasis and then continued through three (3) phases. The phases are dependent on the health of the patient while mechanisms are dependent on the condition and cause of the wound (Smeltzer & Bare, 2004 as cited in Harvey, 2005). The inflammatory or exudative phase occurs from the time of the break of skin integrity up until the fourth day. The proliferative or tissue phase lasts from the fifth to the twentieth day. The maturation phase lasts from day 21, a few months or even years where possible infection may be inevitable.

Wound infection is the main impediment to healing (Topaz, 2012). Wounds may be colonized by bacteria. When a low-level of bacteria is involved, systemic clinical manifestations may not be visible. On the other hand, infection may play a significant role in wound healing when high-level bacterial counts survive with deep invasion. Wound infection continues to be an issue in post-surgery (Vargo, 2012). It may be caused by direct contact, airborne dispersal or self-contamination and may be prevented with proper wound management.

Wound management has made swift progress over the last 25 years (Sarabahi, 2012). It is constantly evolving with the advances in medicine (Dorai, 2012). Treatment has moved from the basic concept of wound protection to the application of dressings and tropical treatments that interact with wound tissue or provide skin-equivalent coverings (Whitney, 2005). Recent wound care modalities seek to modify the local wound environment to facilitate healing. Optimal management of wounds is essential to prevent

developing wound dehiscence (Yao, Bae & Yew, 2013). Hence, general practitioners must appreciate the physiology of wound healing and the principles of wound care.

With the increase in the understanding of the biology of wounds, the advancement in wound management is expected to continue. In the sprint to develop innovative wound treatments, clinicians should not neglect the fundamentals of good wound care if they yearn to derive maximum benefits from these developing technologies and therapies (Sarabahi, 2012).

Wound management and its quality significantly influence several aspects of client's health, lives and well-being (Morison, 2004; Price & Harding; European Wound Management Association, 2008; Wounds International, 2012 as cited in Cornforth, 2013). Wound management is costly and may cause immense stress and difficulty to patients and their significant others. Therefore, it is in the best interest of the client and their significant others that wounds be expertly assessed, managed and healed in the earliest possible time.

Proper wound cleaning embodies a primary step in wound management (Romanelli et al, 2010). In recent years, numerous investigations have led to a modification of the wound cleansing protocol in order to obtain a better control of the bacterial burden during wound bed preparation and to evade additional cell and tissue damage. Occasionally, wound cleaning is required to assist in clearing of debris like devitalized tissue or excessive exudates which may otherwise delay wound healing (Yao et al., 2013). In these instances, gentle irrigation of the wound is either with water or warm sterile solution.

Wound irrigation is the use of steady flow of solution across an open wound to get rid of deeper debris, achieve wound hydration and assist in visual examination. The objective of irrigation is to remove

the potential for infection from wounds (Bianchi, 2000). The irrigated contaminated water will then be subjected to drainage.

Drainage means to draw-off or remove fluid (Collins English Dictionary, 2018). Through the aid of the suction process, excess fluid is sucked-up to a receiving container. This mechanism will assist in the healing of a patient's wound.

Drying is the process of removing water to make something dry (Cambridge Dictionaries Online, 2018). This is the third step in wound management after irrigation and drainage. Excess fluid from the wound site after drainage will be removed through the drying method.

The most commonly used device used for the administration of irrigating solution like the Dakin's is through asepto-syringe. Asepto syringe has a volume of 50 cc with a bulb. The irrigation process using the asepto-syringe consists of low pressures. For low pressure, the force exerted is 1 pound per square inch or psi (American College of Surgeons as cited in Gabriel, Schraga and Windle, 2013).

In some studies, high pressure lavage injures the epithelial tissue, damage the granulation process and cause pain and discomfort to the client (Gabriel et al., 2013). It can also redirect pathogenic microorganisms such as bacteria into the deeper compartments which may predispose infection. Possible complications of high-pressure irrigation include seeding of bacteria and delayed healing of wound. According to the Agency for Health Care Policy and Research as cited in Gabriel et al. (2013) the safe and effective lavage pressure is 4 psi. Based on some research reports, pressures exceeding 15 psi may cause wound trauma.

There is a device in the market which is used for suctioning excess fluids and tissues in wounds. In 1997, vacuum-assisted closure (VAC) was introduced (Morykwas et al., 2000 as cited in Warner et al., 2010). VAC decreases accumulation of bacteria and fluid while it increases granulation tissue formation and wound blood flow (Schuster et al, 2006). VAC therapy has been confirmed

to speed up formation of granulation tissue in a variety of settings and wound closure. Vacuum-assisted closure therapy also decreases the time to healing of wounds (Schaffzin et al., 2004). Established conditions for VAC therapy include the open abdomen, infected sternum, non-healing extremity wounds and decubitus ulcers (Schuster et al., 2006).

However, vacuum-assisted closure therapy has disadvantages. It is expensive and involves extensive amounts of machinery and product, as well as functioning suction (Warner et al, 2010). It means that it needs power source at all times. Another disadvantage of VAC therapy system is that it requires trained and vigilant staff nurses (Warner et al, 2010).

Wound management in the Philippine setting utilizes the conventional method of using asepto-syringe in the irrigation process. Based on interviews with staff nurses assigned at Trauma, Surgical and Emergency Rooms, these steps are sequentially followed using asepto-syringe: First, prepare all the equipment needed such as asepto-syringe, solution, basin and rubber sheet. Second, perform medical hand washing and gloving. Third, assess the wound meticulously. Next, pour the sodium hypochlorite solution into the asepto-syringe. Then, start the irrigation process on the wound. Re-assess the wound for the need to add more solution. After the wound cleansing, drain the contents of the basin.

**Patent review**

Based on a search on the World Intellectual Property Organization (WIPO) Patentscope, there are four devices/systems which are close to the proposed wound cleaning device. The first one, a wound therapy device was published last August 15, 2013. It was invented by Paul A. Hartmann. The therapy device for the management of wounds through negative pressure and fluid irrigation includes a negative-pressure dressing, a pressure sensor which can produce pressure measurement values to determine the negative-pressure in the dressing, a drainage receptacle for the

fluid and a drainage line by means of which the liquid can be expressed from the dressing into the container. The device can include a first pump unit for aspirating fluid from the wound space through the drainage line, an instillation container for the installation fluid and an instillation line. The instillation fluid can be transported from the container to the wound space.

A method and device for the irrigation and drainage of wounds, tubes and body orifices was published last November 1, 2012. It was invented by Bradford J. Macy. A multi-barrel syringe has two functions: delivering and drawing fluid from a target site. The syringe contains two barrels that may be positioned co-axially to the other. The first one may be pre-filled with sterile delivery fluid designed to irrigate catheter tubing. The other one removes the delivered fluid or other body fluids from a site. The syringe may orientate the barrels in such a way that fluid passing in one barrel does not have contact with the other barrel. The syringe contains collapsible and extendable plungers for the two barrels where each plunger's length is adjustable. The syringe includes a locking mechanism to prevent movement of the other plungers while one plunger is in use.

A pulse fluid closed negative-pressure drainage system was published last June 22, 2011. It was devised by Zhang Zhijia. The invention is a pulse fluid closed negative-pressure drainage system for the drainage of acute and chronic wounds in the clinical medical treatment. A pulse liquid system controlled for the closed negative-pressure drainage system not only introduces the concept of closed antibiotic but also produces regular negative-pressure alternation in negative-pressure drainage materials based on a fluid flow. The liquid system is pulse-type and can control time at will. The liquid system retains the advantages of the negative-pressure drainage system and overcomes the defects that blocking easily happens, especially joints of negative-pressure conduits in parallel connection are easy to be blocked by bold crusts and necrotic tissues. Medical foam composite materials harden in short time and

are out of action and the system must be placed after several operations. Blocky drains which may block a drainage pipe are obstructed by foam composite material and can't be eliminated.

A device and method for treating chronic wounds was published last October 30, 2008. It was invented by Eran Eilat. An extracorporeal device for the management of body wound includes a treatment head that needs to be secured to a client's body in the area of the wound. The treatment head contains a chamber with at least one pressure input to receive and apply to the wound a sequence of hyperbaric and hypobaric pressures and an irrigating mechanism to receive irrigating fluid and apply the irrigating fluid to the wound. The treatment head also comprises a drainage output. A control system is arranged to apply the sequence of hyperbaric and hypobaric pressures to at least one input of the treatment head in order to regulate the application of the irrigating fluid input to the irrigating mechanism and to control the drainage output.

**Problem objectives**

The main objective of this research is to develop a prototype in the irrigation, drainage and drying of wounds. Specifically, it sought to develop a hospital gadget or equipment that addresses the problems of the nurses in wound irrigation. Another objective is to compare the effectiveness of the wound cleaning prototype with the conventional device utilizing animal experimentation on rabbits.

**Expected output**

The anticipated output of this Research and Development (R & D) is a wound cleaning device that will perform three functions: irrigation, suction and drying that will facilitate faster wound healing. The prototype will be utilized to facilitate faster wound healing to patients in the hospitals and minimize if not prevent further complications such as infections.

**End-users/Target beneficiaries**

The end-users for this medical device are hospital nurses who will use the prototype with the three functions of irrigation, drainage and drying on the wound care of their clients. It may also be utilized by members of the medical health team in the comfort of the patient's house.

The beneficiaries of this gadget are clients with wounds that need to be cleaned. These include patients who suffered from vehicular accidents or debilitating diseases such as diabetes mellitus types 1 and 2. Aside from the clients who will directly benefit from this device, the medical sector which has been continuously working on the objective of bringing forth biomedical device useful for this specific field will also benefit. The College of Nursing, College of Computing Sciences and Information Technology, and College of Engineering and Architecture will also benefit from the research output by means of utilization and advancements in technology from their respective departments.

## METHOD

**Research design**

Agile model, an iterative method, was utilized. It includes five phases namely planning, requirement analysis, designing, building and testing. The planning phase determines the objectives or the system to be developed. Requirement analysis includes actual observation, interviews, hardware and software requirements needed to develop the system. The designing phase emphasizes the initial input of requirements which were first identified. Building entails the system design to be translated into a machine-readable form. Lastly, in the testing phase, the system was brought to check for errors, bugs or interoperability.

This model was used because the research and development (R & D) project entails the use of motors for the three main functions and coil for the drying of wounds. The research

design allowed the switch or change from the adoption of motor to priming pump.

Other methods of research used were descriptive, longitudinal and comparative. It is descriptive because it was intended for the researchers to gather information regarding development of wound cleaning prototype. It is longitudinal because it entailed weeks of observation during data gathering. It is comparative because three rabbits were being monitored for their wounds' similarities and differences during the animal experimentation.

**Participants and setting**

The wound cleaning device is designed for patients with wounds. Since before it would be tested on actual clients, the gadget would first be utilized on animals, specifically on rabbits. Four rabbits were selected to be used as study population for the study. One for the wound cleaning device, one for the conventional method using the syringe, one as environmental control and the last as back-up or standby for any of the three rabbits in case of untoward event.

The setting of the animal experimentation was at the animal laboratory of the Pampanga State Agricultural University (PSAU). Development of the prototype gadget was done at the robotics laboratory of the University of the Assumption.

**Data collection**

Data imperative for the study include the gathered information on the animal experimentation. These essential observational evidences were utilized for the development of the wound cleaning device which has three functions namely: irrigation, drainage and drying of wounds.

On the conduct on animal testing, the proponents coordinated with the veterinarian from Pampanga State Agricultural University (PSAU) pertinent to ethical considerations regarding

animal care. An IACUC certificate was released prior to actual animal experimentation.

**Ethical considerations**

On the conduct of animal testing, the proponents coordinated with the veterinarian from Pampanga State Agricultural University (PSAU) pertinent to ethical considerations regarding animal care. The animal subjects for the experimentation/clinical trials are vulnerable to the application of the prototype testing its usefulness. Hence, an IACUC certificate was released prior to actual animal experimentation.

The potential beneficiaries of this research are the hospitals and their patients. The experimentation on rabbits, with the use of the wound cleaning prototype, will prove to benefit hospital clients and outweighs anticipated risks. For the management of adverse effects, rabbits will be treated based on the ethical guidelines on animal experimentation.

**Data analysis**

Data derived from clinical trials were subjected to descriptive statistics based on observation. Wound diameter and retraction were compared on three animals, specifically the rabbits was utilized. Data gathered from the animal experimentation was used for the improvement of the wound cleaning device.

## FINDINGS

**Phase 1: Acquisition of hardware resources**

Acquisition of hardware took place right after the receipt of funds. The priming pumps, which are essential on the two functions: irrigation and suction, were purchased in Taiwan. Shipping and handling on the said hardware took about more than a month. Devices such as control valve, Arduino Mega, LCD screen, keypad, power supplies, relays and other equipment necessary to construct the said prototype were purchased afterwards.

Based from the dates of purchases, priming pumps were purchased in April, 2017. These two pumps, which were used for the two modules, were set-up and tested by the computer engineer (developer) for functionality and were ready to be integrated in the microcontroller. The IT specialist (developer) was able to complete the program and uploaded it to Arduino Mega after the other equipment has arrived. One of the nurse researchers advised the developers to omit the coil in the drying process because according to research studies, heating delays wound healing. Since the coil was omitted, temperature sensor will not be needed for this module. The temperature sensor was supposed to monitor and control the maximum heat produces by coil.

**Specifications of the computer (digital) hardware**

The microcontroller board used is Arduino Mega. The Liquid Crystal Display (LCD) has a size of 2 x 16 (2 rows times 16 columns equal 32 characters). The keypad has 4 rows and 4 columns (4x4). The keypad and LCD are used for display and navigations and help user to select from the options. A separate switch was utilized for the on/off function.

**Software**

The software that was utilized is Arduino (IDE). It is an open-source that runs on Windows, Mac OSX and Linux. The environment was written in Java and is based on Processing and other open- source software. It will then be uploaded to the Arduino Mega, so the instruction will be transferred on the said microcontroller to perform the instructions.

**Mechanical materials**

All sizes and dimensions are approximate values subject for adjustment based on design/technical computations. The control valve is used to stop the flow of the solution which is made from stainless steel. The motors will utilize ¼ HP at 220 volts. Motors are used in this device, one for irrigation, other for suction and a motor

fan for the drying. The flexible pipes are measured at 12 mm in diameter.

**Phase 2: Initial product development**

The initial plan of mixing the solution and pressurizing air to irrigate from the motor was changed into pump. Solutions continuously flow as long as the pump is activated. A control valve was used to stop the solution from flowing, even a single drop, and simply deactivate the pump to stop the irrigation process. The use of coil to heat air from the fan when drying was also omitted since hot air is not good for the wound according to some literatures and studies. The drying module is a combination of motor and fan to blow and dry the applied solutions to the wounds. The suction process is the reverse mechanism of the irrigation process. The pump is used reversely, that is pulling /sucking from the wounds to the other part. A drainage or container is attached to it.

**Phase 3: Testing of the device on animals**

Four five-month-old male rabbits were used for the animal testing phase of the study. One rabbit was used for the new device. The manual method of wound cleaning and management was used in another rabbit. One served as the control. The wound of the control animal was left without any intervention and allowed to heal naturally. The last rabbit served as the environmental control animal. Rabbits were anesthetized using Zoletil 50 (Tiletamine and Zolezepam) at the dosage rate of 5 mg/kg. Three rabbits were prepared for surgery and an elliptical incision (2-2.5 cm diameter) was made at the back area of each animal. The fresh surgical would was then flushed with normal saline solution and started to receive the different experimental treatments on same day.

Machine (using the device) and manual irrigation (using disposable syringe to flush the wounded area), suction and drying were done daily until the wound was completely healed. The wound was covered with gauze after flushing. The wound of other rabbit in the control group was allowed to heal naturally without any intervention.

The developers solved issues like the leakage of the solution from pressure, especially in the irrigation module, the length of hose for the irrigation and suction, and the wires used in the drying module.

In May and June, 2018, the prototype was in the process of fabrication and casing. After these developments, testing and evaluation was done. In July 2017, the developers were able to finish the prototype and ready to use.

Wound retraction is an essential factor prior to the end state closure of the wound healing process (Yannas, Tzeranis & So, 2017). With this importance, contraction was measured daily and photos were taken regularly (See Figure 5). Diameter, which is a straight line that passes through the center, was utilized (Oxford, 2018). It is then used as the first parameter to compare the three wounds.

Results show that the wound cleaning device had smaller diameter in millimeters after three weeks compared to the manual and control. Though there is no gross difference, it is still considered to be a relative improvement compared to the other two wounds since it is considered a gadget or a device. This mode of measurement is considered relevant in order to facilitate and promote wound healing and provide proper wound management (Grey, Enoch & Harding, 2006).

There is also a higher retraction rate for the new gadget in comparison to the other two wounds where manual cleaning was used on one while no procedure was utilized for the other one. Though the percentage is more marked compared to the diameters in millimeters, it is still considered a minimal difference. This means that there is no significant difference between the three wounds. Hence, there is also no significant improvement on the wounds per week. Wound healing, which is an intricate process composed of several cell types such as fibroblasts and keratinocytes, using the device was comparable with that of the manual wound cleaning method (Amorim et al, 2017).

The result might have been different if the device was used in open complicated wound such as a typical wound in diabetic patients. There might be a possibility of significant difference and improvement of the wound because it will entail more time for it to heal. The normal time for wound healing is three weeks with three phases namely: inflammatory, fibroblastic and maturation (Mercandetti, 2017). Hence, an infected wound would require more weeks to heal thus, there is more time to compare the three sets of wounds. More time (in weeks) would mean bigger possibility of having significant difference and improvement on the wound which utilized the gadget.

**Phase 4: Final product development**

In December, 2017, after the first testing at the rabbits, the veterinarian suggested that materials can be used for irrigation, such as the quality of hose, so user can be able to control the flow of solution directly on the hand and not on the device alone. The developers purchased new set of hose.

In April and May, 2018, the prototype was in the process of fabrication and casing. After these developments, testing and evaluation were done. The developers were then able to finish the prototype and is ready to use.

In using the system, it will be initialized by a welcome note and selection from the three functions. It shows display 1 for Irrigation, 2 for Drainage and 3 for Drying. Once selected, it will perform the process. Then, the user is free to adjust/modify pressure based on the needed pressure. The user may opt to exit the current function and may choose other process or exit.

The final design of the multi-functional wound care prototype is shown in Figure 1. This device combines irrigation, drainage, and drying into one cost-effective, hygienic system, streamlining the wound management process for medical staff.

**Figure 1**
*Final design of the prototype*

## DISCUSSION

The developed prototype aimed to serve as a wound cleaning device, a product of research and development (R & D). With its proper use, it may be utilized to facilitate in wound management, a dependent nursing intervention (Romanelli et al, 2010). Diligent management of a client's wound is imperative in the promotion of its healing. Hence, wound healing would largely depend on the equipment or device that will be used.

Wound healing, which is a complex progression of repair after an injury, involves phases with corresponding time frames (Nguyen et al, 2009). Garraud, Hozzein and Badr (2017) have identified four phases of wound healing and their respective time frames: 1) hemostasis or onset of injury (1-3 days), 2) inflammation or body's natural response to injury (3-20 days), 3) cell proliferation or rebuilding with new granulation tissue (7-10 days) and 4) remodeling, maturation and wound closure (40 days to 2 years). These specific ranges of days, or even years, serve as baseline for any invention, a wound healing device to be exact.

The testing results of the designed prototype on animals, specifically on rabbits, revealed that within three weeks (21 days), there is a difference on wound's length in diameter and retraction/contraction rate compared to the conventional method of using syringe and environment control. It has shown that the device yielded smaller diameter in millimeters, which was measured through a caliper, and higher retraction/contraction rate. Though there is minimal difference between the three wounds, the gadget is still considered effective in order to facilitate and promote wound healing and provide proper wound management (Grey, Enoch & Harding, 2006).

The findings may significantly vary if the wounds were infected, such as in the case of diabetic foot on humans. According to the study of Hirsch et al. (2008), diabetic wounds showed a sustained significant infection compared to non-diabetic wounds which cause significant delay in wound healing. Since this will entail more time to heal, there will be more sets of results and the differences on the diameter will be significant through the use of statistical treatment such as t-test. There will also be marked improvement on the contraction rate (in percentage %) on the wound cleaned utilizing the developed prototype.

The wound cleaning device performs three major functions for the irrigation, drainage and drying of wounds. Though the abovementioned purposes are individualized, they complement each other in order to facilitate wound healing, an essential component of wound management which can prevent the possibilities of having wound dehiscence (Yao et al., 2013).

The first of irrigation is essential in wound management. Its main thrust is to remove sediments which may predispose harmful microorganisms (Bianchi, 2000). With the inclusion of the irrigating part on the wound cleaning device, this would lessen if not entirely prevent infection. The tubes, which are attached to the motorized pumps, bring out a steady stream of water that will be directly aimed toward the wound. The water pressure of the device was computed up to 4 pounds per square inch (psi), which is considered a safe

and effective level for irrigation (Agency for Health Care Policy cited in Gabriel, 2013).

The second function of the wound cleaning device is drainage. Drainage means to collect water and exudates from the wound. The device utilizes reverse function for the first module as opposed to negative pressure wound therapy (NPWT) of Yang et al (2017), which also promotes wound healing by reducing pain and length of treatment. This means that incorporating the purpose of drainage facilitates shorter span of time in wound healing.

The third function, which is drying, removes excess water or liquid from the wound. In this device, a mechanical part is attached to promote drying. Ordinarily, wounds are left open to be air dried and easily heal. Since the pressure is regulated by a motor, there is more air delivered on the wound compared to simple air drying. Heat was not used because according to the study of Silva et al. (2017), it delays wound healing.

Overall, if this wound healing device contain the three functions of irrigation, drainage and drying, it would be an effective equipment. This is because each of the functions is individually therapeutic for wound management. If these are all put together, the device would yield positive results.

Another advantage of this prototype is its convenience and ease of use. Though the three functions can be separately performed, it would be beneficial to have a single equipment that can perform all of these tasks. There would also be a reduction in the time of accomplishing the three functions because the device contains all the hardware for the abovementioned functions.

## Conclusions

**The research group was able to successfully develop a wound cleaning device.** Given the researchers' competencies, proper financial allocation or monetary funding and sufficient time to finish, the project was finished. Though some of the needed

materials were imported overseas (Taiwan) and there was a new member of the research team who happens to be a developer, the device was still furnished after an extension of at least three months.

**The prototype can perform the three functions.** The three functions are for the irrigation, drainage and drying of wounds. These are all beneficial in facilitating wound healing, which is imperative in the nursing management in hospitals.

**The device is considered effective during animal experimentation**. It was proven safe on the wound healing of rabbits. There were no signs of possible impending infection during the animal experimentation phase.

**The wound healing equipment is more convenient and hygienic to use.** It has three functions which are compressed into one device. Since it would entail more time to individually perform the three functions using different materials or gadgets, this would decrease the time needed for the wound cleaning. It is also hygienic because the tubes are changed for every use.

**The prototype needs to be modified after the animal experimentation.** There was a need to adjust the hose and correctly design and fabricate the final product. The initial design was altered based on the rabbit testing.

**The research group can apply for patent.** The research and development project can be patented by following certain guidelines and procedures. The final design will be submitted to the Intellectual Property Office (IPO).

**Recommendations**

Althouth the study was conducted on animals, specifically rabbits, it is hereby suggested that the prototype be utilized on human persons for the next phase of research. This is because the target beneficiaries for this gadget are patients with wounds.

The prototype could have been performed on more rabbits during the animal experimentation. Though there was a rabbit for environment control, additional rabbits can be utilized to strengthen the results of the animal experimentation.

The wound cleaning device can still be modified to be more compact in order to be marketable. For the equipment to be competitive, a smaller version could be designed. This can be utilized for out-patients as well.

The device can be applied for patent. The researchers may inquire the needed requirements from Intellectual Property Office (IPO) Philippines prior to the presentation of the manuscript in fora or other research-related activities.

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# Analgesic activity of *Cananga Odorata* (Lam.) Hook. F & Thomson Leaves Decoction

*Melanie O. Junio, Justin M. Gonzales & Menchu C. Luzano*

**ABSTRACT**

*This experimental study aims to assess the analgesic activity of fresh and dried Cananga odorata (Ilang-ilang) leaves decoctions, FCOLD and DCOLD, respectively, in female albino mice. The decoctions were subjected to phytochemical screening, acute toxicity test, and analgesic bioassay through the Tail Immersion Test. Results show that the decoctions contain flavonoids, saponin, phenols, sterols, and terpenes which have been associated with analgesic properties of many plants. The extracts were also found to be safe at a concentration of 20mL/kg body weight. Tail-flick latency in mice administered with FCOLD and DCOLD were significantly higher compared to the negative control at $\alpha=0.05$ based on a one-tailed Permutation test for paired replicates. These indicate that the decoctions appear to alleviate pain among the test animals. Suggestions for further study are presented.*

**Key words:** *analgesic, Cananga odorata, ilang-ilang, permutation test, tail-flick latency*

## INTRODUCTION

While pain is not a disease, it is the most common nonspecific manifestation to many diseases and often requires more immediate attention than the disease itself (APS, n.d.). Affordable, over-the-counter pain relievers abound; however, their associated side effects, especially gastrointestinal disorders, demand the continuous search for better alternatives. Personal communication with the Aetas of Villa Maria, Porac, Pampanga

revealed that they drink *C. odorata* leaves decoction to relieve their body pain after a long day's work. They claim that it an "Alaxan™-like effect.

*Cananga odorata* (Lam.) Hook. F & Thomson, a fast-growing tree believed to have originated from the Philippines, belongs to the family Annonaceae. It can grow to a height of about 30 m (100 ft) and has oval and shiny leaves as much as 20 cm long. The flowers appear in axillary clusters, initially greenish then turns yellow with a very sweet scent. A many-seeded, greenish fruit succeeds the flowers (Ryman, n.d.).

Various *C. odorata* parts have been used folklorically as aphrodisiac, anti-depressant, anti-infectious, antiseptic, euphoric, hypotensive, nervine (quieting) regulator, sedative (nervous), stimulant (circulatory) and tonic (Ylang-ylang, n.d.). Its fruit constituents have been found to possess cytotoxic and anticancer properties, while compounds from the bark inhibit microbial growth (Philippine Medicinal Plants, n.d.). The ethanolic extract of its fruit also exhibited central and pheripheral analgesic activities in experimental animals. These were tested through the tail flick method in Wistar rats and writhing method in Albino mice, respectively, using aspirin as control (Maniyar & Devi, 2015).

According to folks from India and islanders of the Indian Ocean, the leaves of *C. odorata* relieve itchiness by direct topical application and also treat dandruff (Jain & Srivasyava, cited in Tan, Lee, Yin, Chan, Kadir, & Goh, 2015). Tan et al. (2015) enumerates the reported bioactivities of *C. odorata* leaves. The methanolic extract has antimicrobial activity against Gram-positive bacteria and some fungal strains. It also possesses antioxidant, anti-inflammatory and antihyperglycemic properties. The essential oils from the leaves are possible anti-pests as repellent and fumigant.

Phytochemical screening shows that the methanolic leaf extracts of the plant contain alkaloids, carbohydrates, glycosides, saponin, phenols and tannins (Indrakumar, Selvi, Gomathi, & Karpagam, 2012), flavonoids, and steroids (Fulekar, Pathak & Kale, cited in Maniyar & Devi, 2015). These compounds have been found in plants with analgesic activity, with flavonoids playing a major role (Nandhini, Roy & Kumar, 2018). The essential oil from the leaves of *C. odorata* has been found to contain monoterpenes (e.g. linalool, sab inene), sesquiterpenes (e.g. aromadendrene), and, aliphatic compounds (e.g. hexanol). However, the identity and amounts of specific constituents significantly varies with geographic location. For example, the essential oils of *C. odorata* leaves and flowers from Cameroon were comparable. The same classes of compounds were found in samples of leaves from Australia but with higher hexanol concentrations, and absence of a specific monoterpene, sabinene (Tan, et al.).

Ilang-ilang oil is used as a food additive and does not pose health risk in humans (Burdock & Carabin, 2008). The study conducted by Maniyar and Devi (2015) on the acute oral toxicity of the ethanolic fruit extract of *C. odorata* show that LD50 was considered as more than 2000 mg/kg body weight. However, different extracts from various plant parts exhibited cytotoxicity toward malignant melanoma cell, hepatocarcinoma cancer cell lines, among others (Tan, et al.).

No systematic study has yet been done on the pain-relieving action of any type of *C. odorata* leaf extract, although the anti-inflammatory activity of the methanolic leaf extract has already been verified (Tan, et al.). This experimental study aims to assess the analgesic activity of fresh and dried *Cananga odorata* leaves decoction in laboratory animals through the Tail Immersion Test. Specifically, it compares the tail-flick latency of laboratory mice

when the tip of their tail is submerged in hot water before and after administration of the leaf extracts.

Verifying the pain-relieving activity of the *C. odorata* leaves decoction (COLD) in laboratory animals may initiate further studies on the plant as another possible natural source of safer and novel analgesic in the Philippines.

## METHOD

### Collection and Authentication of Plant Material

Leaves of *C. odorata* were collected from the Mother of Good Counsel Seminary in the City of San Fernando, Pampanga. Plant sample was submitted to Jose Reyes Memorial Herbarium, Institute of Biology, College of Science, University of the Philippines Diliman, for authentication.

### Phytochemical Screening

*Preparation of Decoction.* Two different decoctions were prepared from clean, healthy leaves of *C. odorata* following the procedures of the Aetas from Villa Maria, Porac, Pampanga, and Martins et al. (2011), respectively. The fresh *C. odorata* leaves decoction (FCOLD) was made from a ratio of seven fresh leaves (about 4g) for every cup of distilled water (about 250 mL). The dried *C. odorata* leaves decoction (DCOLD) was formulated by adding 1g dried leaves to 200 mL distilled water. Both mixtures were boiled for five minutes and left to stand for another five minutes before undergoing two successive filtrations using Whatman filter paper.

*Phytochemical screening.* Phytochemical examinations were carried out for the extracts as per the standard methods (Tiwari, Kumar, Kaur, Kaur, & Kaur, 2011).

Detection of alkaloids: Each extract was mixed in dilute Hydrochloric acid and filtered. Filtrates were treated with Wagner's

reagent (Iodine in Potassium Iodide). Formation of brown/reddish precipitate indicates the presence of alkaloids

Detection of carbohydrates: Each extract was mixed in 5 ml distilled water and filtered. The filtrates were used to test for the presence of carbohydrates.

a) Molisch's Test: The filtrate was treated with two drops of alcoholic α-naphthol solution in a test tube. Formation of the violet ring at the junction indicates the presence of carbohydrates.

b) Benedict's Test: The filtrate was treated with Benedict's reagent and heated gently. Orange red precipitate indicates the presence of reducing sugars.

Detection of glycosides: Each extract was hydrolyzed with dilute HCl, and then subjected to test for glycosides through the Legal's test. It was treated with sodium nitropruside in pyridine and sodium hydroxide. Formation of pink to blood red color indicates the presence of cardiac glycosides.

Detection of saponins using the Foam Test: A 0.5 gm of extract was mixed with 2mL of water. Foam produced persisting for ten minutes indicates the presence of saponins.

Detection of phytosterols through the Salkowski's Test: Each extract was mixed with chloroform, then filtered. The filtrate was treated with few drops of concentrated sulphuric acid, shaken, and allowed to stand. Appearance of golden yellow color indicates the presence of triterpenes.

Detection of phenols using the Ferric Chloride Test: Each extract was treated with 3 to 4 drops of ferric chloride solution. Formation of bluish black color indicates the presence of phenols.

Detection of tannins using the Gelatin Test: To the extract, 1% gelatin solution containing sodium chloride was added. Formation of white precipitate indicates the presence of tannins.

Detection of flavonoids through the Alkaline Reagent Test: Each extract was treated with few drops of sodium hydroxide solution. Formation of intense yellow color, which becomes colorless on addition of dilute acid, indicates the presence of flavonoids.

Detection of proteins and amino acids:

a) Xanthoproteic Test: Each extract was treated with few drops of concentrated nitric acid. Formation of yellow color indicates the presence of proteins.

b) Ninhydrin Test: To the extract, 0.25% w/v ninhydrin reagent was added and boiled for few minutes. Formation of blue color indicates the presence of amino acid.

Detection of diterpenes using the Copper Acetate Test: Each extract was treated with 3 to 4 drops of copper acetate solution. Formation of emerald green color indicates the presence of diterpenes.

**Preparation of Test Animals**

Prior to the conduct of the study, approval form the Institutional Animal Care and Use Committee (IACUC) was sought to ensure that all internationally accepted experimental protocols, and principles for laboratory animal use and care are strictly followed.

Female albino (BALB/c) mice weighing 20 ± 4 g, about 12 to 14 weeks old, were used for all tests in this study. The mice were purchased from St. Luke's Medical Center, Quezon City. They were maintained at Pampanga State Agricultural University, Magalang, Pampanga under the following conditions: a) housed in cages by pair at temperature between $22^0$C to $25^0$C, relative humidity ranging from 50% to 60%, artificial lighting of 12 hours light and 12 hours dark; b) fed with conventional laboratory mice diet with

unlimited supply of water. Acclimatization was done two weeks prior to dosing.

**Acute Toxicity Assay**

The toxicity test on *C. odorata* leaves decoction were conducted following the OECD protocol on Acute Oral Toxicity for Testing Chemicals Up-and-Down Procedure (2008). After acclimatization and prior to dosing, the animals were fasted overnight, i.e., food but not water was withheld. After fasting, animals were weighed to serve as basis for the dose volume of test substances to be administered. In this case, since decoctions were used, the maximum volume given to the mice was 2mL/100g body weight. Decoctions were prepared shortly prior to administration. The test substances were administered in a single dose by gavage using a stomach tube.

Dosing of the animals followed the Limit test. Two animals, one for FCOLD and one for DCOLD, were dosed with the maximum volume of the test decoctions according to their body weight. The animals were observed for the first 30 minutes, and periodically during the 24 hours with special attention given during the first four hours. Food was provided two hours after dosing. The parameters to be observed for toxicity included mortality, diarrhea, noisy breathing, salivation, convulsion, injury, changes in locomotor activity, weakness, discharge from eyes and ears, coma, pain, aggressiveness, food or water rejection, or any other signs of toxicity.

**Analgesic Activity**

The analgesic activity of *C. odorata* leaves decoction was determined using the Tail Immersion Test (Yasmen, Aziz, Tajmim, Akter, Hazra, & Rahman, 2018) with modifications. The following experimental design (Table 1) was adopted, entailing ten randomly-assigned mice per group for a total of 40 animals:

**Table 1**
*The experimental design*

| Group Description | Group # | Treatment |
|---|---|---|
| Control | 1 | Distilled water boiled for five minutes |
| Positive Control | 2 – Alaxan™ | 30mg/kg paracetamol/ibuprofen dissolved in distilled water |
| Test Group – fresh leaves decoction | 3 – FCOLD | 2mL/100g body weight |
| Test Group – dry leaves decoction | 4 – DCOLD | 2mL/100g body weight |

The Tail Immersion Test was done by dipping the tail tip of the mice in hot water (50±1 $^0$C). Thirty minutes prior to dosing, the latency period of all test animals was measured. This was repeated 30, 60, and 120 minutes after treatment.

### Data Analysis

A one-tailed Permutation Test for Paired Replicates was used to analyze the data from the tail-flick method. This non-parametric statistical test is appropriate for two paired replicates in the interval scale of measurement, without assumption of normality and homogeneity of variance. It has a power-efficiency of 100% because it uses all the information obtained in the sample (Siegel & Castellan, 1988).

## RESULTS

### Authentication of Plant Material

The Jose Reyes Memorial Herbarium, Institute of Biology, College of Science, University of the Philippines Diliman certified that the plant used for the study is *Cananga odorata* (Lam.) Hook. F & Thomson belonging to the family Annonaceae (Appendix A).

**Phytochemical Screening**

Table 2 shows the qualitative tests undertaken with corresponding results to determine the phytochemicals present in FCOLD and DCOLD. Pictures of the qualitative test results are shown in Appendix B. It is noticeable that the same set of secondary metabolites were detected in the two extracts, except that FCOLD has a higher reducing sugar concentration than DCOLD.

**Table 2**
*Phytochemical screening of FCOLD and DCOLD*

| Phytochemical Screened | FCOLD | DCOLD |
|---|---|---|
| Alkaloid (Wagner's Test) | - | - |
| Reducing sugar (Benedict's Test) | ++ | + |
| Glycosides (Legal's Test) | - | - |
| Saponins | + | + |
| Phytosterols (Salkowski's Test) | + | + |
| Phenols (Ferric Chloride Test) | + | + |
| Tannins (Gelatin Test) | - | - |
| Flavonoids (Alkaline Reagent Test) | + | + |
| Proteins (Xanthoproteic Test) | + | + |
| Amino Acids (Ninhydrin Test) | - | - |
| Diterpenes (Copper acetate Test) | + | + |

**Toxicity Test**

The mice given both FCOLD and DCOLD did not exhibit any sign of toxicity 24 hours after administration of maximum allowable dose.

**Tail Immersion Test**

The Permutation Test for Paired Replicates assesses summation of differences between scores measured from subjects under two conditions. Table 3 presents the summation of differences in the observed tail-flick latency of the animals during the Tail Immersion Test.

The null hypothesis, $H_0$: There is no difference in the tail-flick latency among mice prior to and after dosing, was tested at $\alpha$=0.05. The study adopted the alternative hypothesis, $H_1$: The tail-flick latency of among mice is longer after administering the decoction, a one-tailed test.

**Table 3**
***Summation of differences, Σd, between the observed tail-flick latency prior to and after dosing***

| Experimental Group | Σd (in minutes) | | |
|---|---|---|---|
| | 30 minutes | 60 minutes | 120 minutes |
| Negative Control ($dH_2O$) | 5.73 | -16.43 | 1.87 |
| Positive Control (Alaxan™) | -10.39 | 5.66 | -13.41 |
| FCOLD | 14.70* | 1.69 | 2.85 |
| DCOLD | 14.38* | -2.18 | 11.73* |

*Note:* significant at α = 0.05

Data show that both FCOLD and DCOLD significantly increased the tail-flick latency of the mice 30 minutes after administration of the decoctions. At 120 minutes, the tail-flick latency among mice which received DCOLD is still significantly higher vis-à-vis the tail-flick latency prior to dosing.

## DISCUSSION

This experimental study aims to assess the analgesic activity of fresh and dried *Cananga odorata* leaves decoction, FCOLD and DCOLD, respectively, in laboratory animals through the Tail Immersion Test.

The results of the toxicity test for both FCOLD and DCOLD indicate that at a concentration of 2mL decoction/100g body weight (or 20mLdecoction/1kg body weight), the extracts have no adverse effects on the health of the test animals. All animals survived and did not show any sign of toxicity throughout the conduct of the

experiment. This finding adds to the list of *C. odorata* extracts found to be safe, which includes oil (Burdock & Carabin, 2008), and ethanolic fruit (Maniyar and Devi, 2015) extracts.

The Tail Immersion Test is a non-inflammatory behavioral pain-study in animal models which measures tail-flick latency - the period of time the test animal demonstrates an abrupt movement of the tail as a reaction towards the heat stimulus applied (Yam, Loh, Oo & Basir, 2020). It is a well-established method for studying the central analgesic effect of drugs through opioid receptor (McCurdy & Scully, cited in Saha, Guria, Singha & Maity, 2013; Yam, Loh, Oo & Basir). The significant increase in the tail-flick latency after administration of FCOLD and DCOLD at 20mL/kg body weight as compared to the negative control ($dH_2O$) implies that the extracts are potential analgesics which targets the central nervous system.

The negative Σd's obtained from the positive control (Alaxan) appear to be flawed. Although the Tail Immersion Test is not sensitive to the analgesic effects of ibuprofen, an NSAID (Yam, Loh, Oo & Basir), paracetamol is believed to act mostly via a central mechanism (APS, n.d.). This should have somehow increased the tail-flick latency of the test animals. The difficulty of dissolving the Alaxan powder from the capsule could have contributed to this result. Utilizing another drug of similar activity with but has a better solubility in water than Alaxan is recommended when the assay is repeated. The use of Alaxan in the study was based on the claim of the Aetas of Villa Maria, Porac, Pampanga that Ilang-ilang leaves decoction has an Alaxan-like effect.

The significant increase in tail-flick latency for groups administered with FCOLD and DCOLD may be attributed to the presence of certain secondary metabolites detected from the phytochemical screening of the extracts. Literature on plants possessing analgesic activity (e.g., Lisa, Islam & Qais, 2020; Nandhini, Roy & Kumar, 2018) have associated this property with flavonoids, saponin, phenols, sterols, and terpenes. The specific compounds under each category and their mechanism of action in pain relief are well documented. For example, the flavonols quercitin and rutin were found to inhibit the production certain

substances in the body that leads to pain (Ferraz, Carvalho, Manchope, Artero, Rasquel-Oliveira, Fattori, Casagrande, & Verri Jr., 2020). Isolation and identification of the metabolites in *C. odorata* leaves decoction need to be conducted to establish their role in pain alleviation. It would also be important to determine the concentration of these active components which might be able to explain the longer efficacy of DCOLD compared to FCOLD.

## Conclusions

This research shows the analgesic activity of Cananga orodata leaves decoction in fresh and dried condition in animal models in terms of tail immersion tests. It also further supported the presence of multiple specific secondary metabolites that appeared in the different qualitative analysis. These metabolites may influence the central nervous system of the laboratory models. In addition, the toxicity test revealed that both decoctions were safe at a concentration of 20 mL/kg body weight, since no mortality or signs of toxicity were observed among the test animals. This study thoroughly supports the analgesic activity of C. orodata and its traditional use, bounded by the evidence in the qualitative and tail immersion test. It also strengthens the use of effective traditional medicine methods in alleviating pain, especially in rural areas where people are attached with their cultural beliefs while also backed by the evidence supporting its efficacy.

## Recommendations

In the conduct of the Tail Immersion Test, it is suggested that the tail-flick latency is measured at an interval of one hour. A thirty-minute interval appears to be too close that they may still be too sensitive to heat and therefore lowered their tail-flick latency.

Overall, the study provided baseline data on the probable analgesic activity of *C. odorata* fresh and dried leaves decoction. It is however recommended that another set of experiments be conducted taking into consideration the suggested modifications. Further investigation is also necessary as regards the specific substances which may be responsible for the observed effects.

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# Clergy expectations and commitments: results and analysis of the 2017 Domus Pastorum survey

*John Denver A. Desolo*

**ABSTRACT**

*Priesthood is viewed as either a career or a vocation; notwithstanding this, health and age lead clergy to opt to minimize or suspend religious activities. Studies found that priests are concerned about when they would retire and their financial situation despite generally feeling satisfied with their ministries. Thus, the Archdiocese of San Fernando founded Domus Pastorum (Home of the Priests, Bale Pari) for members of the clergy who are ailing or finding rest after years of service. A 2017 survey conducted among select clergy paved the way for the formulation of the institution's vision and mission statement, with the Research and Planning Office of the University of the Assumption analyzing the findings through thematic analysis and axial coding using MaxQDA 2018, later subjected to "member checking."*

*Analysis of the responses yielded key points regarding expectations (physical appearance, programs, and amenities), expected needs (facilities, diet, staff, health, spiritual enrichment, and community), commitments of stakeholders (financial, time, and self), and additional comments on administration and gatherings. It is given that priests live a relatively different lifestyle, but are also individuals who share the same basic needs, highlighting the need for greater reflexivity about gerontology's use of "successful aging" and other normative models.*

*The expectations and commitments aligned with findings that a change in attitude is needed so the elderly are depicted not as a burden, but as sources of learning points through their valuable experiences. Ultimately, it is society's responsibility to ensure an improved and effective quality of life for all retirees in return for dedicated service to the ministry, country, and humanity.*

**Key words:** *clergy, retirement, gerontology, expectations, commitments*

## INTRODUCTION

The Catholic Church considers priesthood as more than a career; it is a way of being. It is a life of sacrifice and service because it is the life of our Lord. Thus, a priest's vocation is a call to love others; to paraphrase St John Mary Vianney: a man is not a priest for himself – he is a priest for others (Bonacci, 2019). Priesthood satisfaction, in this sense, is not an individual state of mind dependent on the environment and circumstances. Instead, priesthood satisfaction can be understood as a religious emotion that allows them to remain faithful to their vocation as Catholic priests (Cornelio, 2012). With such, the vocation of priesthood poses great human and spiritual challenges and opportunities along the developmental paths toward personal and ultimate integrity. (Edwards & Edwards, 2016).

Still, whether viewed as a career or a vocation, there will be a time when priests would opt to minimize, if not totally suspend religious activities due to health reasons, particularly because of age. In a study by Kane and Jacobs in 2015 about Catholic priests and their ideas about retirement and work, the mean retirement age was 63. The study found that priests were generally satisfied with their ministries, but most participants were concerned about when they would be able to retire and their financial situation in retirement (Kane & Jacobs, 2015). In another study, most priests found there were energy limitations with aging and reported health concerns. This follows naturally with being conscious of health and self-care, including diet, exercise, and medical care. With aging, stress for most came from the pastoral demands of parishioners and hierarchs, their own demands for meeting the needs of all (Kane, 2017).

With such, the people of God in Pampanga envision a home for priests of the Archdiocese of San Fernando journeying in sacramental brotherhood in the service of the Church of the Poor, most especially with the members of the clergy who are ailing or finding rest after years of service in the Catholic Church. It is with such that the Domus Pastorum (Home of the Priests, *Bale Pari*) was founded.

It is located in SACOP Grounds, Barangay Maimipis, City of San Fernando, Pampanga, and is presently headed by Chairperson Rev. Fr. Marvin M. Sinlao, RN, MAN, DrPH. The foundation commits to have a homely residence for priests conducive to community life, wellness, rest and recreation, basic medical care, and psycho-spiritual formation.

In view of the institutionalization of Domus Pastorum Foundation, Inc., a survey was conducted among select clergy of the Archdiocese of San Fernando in 2017. The result of the survey paved the way for the formulation of the vision and mission statement of the said institution.

During its Board of Trustees Meeting last December 6, 2019, it was agreed upon that the result of the survey conducted in 2017 must be analyzed and interpreted further. It is through this that the Research and Planning Office of the University of the Assumption has taken a hand in the further perusal of the said survey report to fulfill the board's desire as directed by the Chairman of the Board of Trustees, Most Rev. Florentino G. Lavarias, D.D.

This analysis perused data from a survey conducted to the City of San Fernando clergy in the said year as regards the improvement of Domus Pastorum. Surveys provide evidence on practice, attitudes, and knowledge. Like all research, surveys should have clear research question(s) using the smallest possible number of high-quality, essential survey questions (items) that will interest the target population (Story & Tait, 2019).

The source of data is the transcription of the said survey attached in the letter from Rev. Fr. Marvin M. Singlao, RN, MAN, Dr.PhD, Domus Pastorum Executive Director, addressed to Rev. Fr. Joselito C. Henson, SThD, PhD, President of the University of the Assumption.

The transcript reflects the responses of select clergy on three key questions (Q):

- What are your expectations (physical appearance, service, amenities, etc.) for Domus Pastorum?

- What are the needs that you expect Domus Pastorum should provide?

- What are you willing to share/contribute to make it a reality?

## METHOD

Thematic analysis, as a qualitative analytic method, is widely used in health care, psychology, and beyond. (Xu & Zammit, 2019). Axial coding was considered in this study since it combines inductive and deductive thinking, as cited in Kelle (2006). Axial coding is the breaking down of key themes in the analysis of data. It is the process of relating categories and concepts (in this study, codes) with each other via a coding paradigm to include categories related to the phenomenon under study, the conditions related to that phenomenon the actions and interactional strategies directed at managing or handling the phenomenon, and the consequences of the actions or interactions related to the phenomenon (Corbin & Strauss, 2012).

The initial analysis of the transcription was the process of categorizing or "coding" the responses into themes via deductive coding as guided by key points already mentioned in the said document per Q. Deductive coding is the coding method wherein preconceived codes are set as a reference through the coding process. (Williamson et al., 2017).

After deductive coding was used to identify and categorize ideas derived from each response in the Qs per key point by looking at the glaring concepts of each of the responses, it was noted that each response might yield multiple key themes. Each key theme was grouped accordingly to yield common key themes. The preceding process, therefore, yielded new themes, this time via inductive coding as guided by the initial codes identified. This coding process involved recognizing new significant key concepts from the yielded initial themes and coding them anew prior to a process of interpretation (Fereday & Muir-Cochrane, 2006).

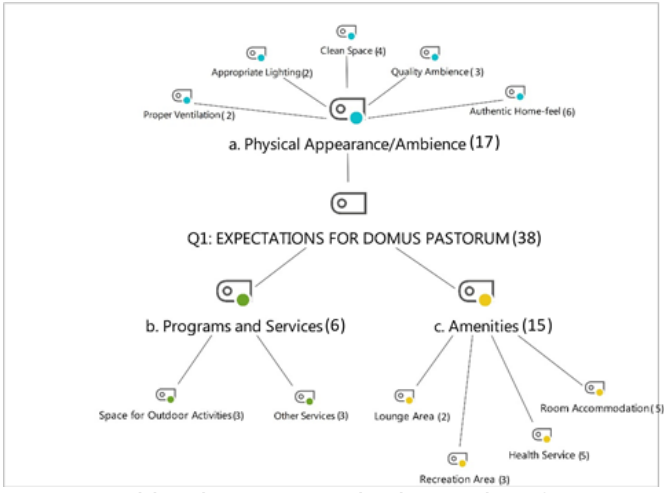
The entire transcription analysis and coding procedure were done through MaxQDA 2018. A summary of the coding, frequency of responses, code theory model for each Q, and other visual tools which aided in the perusal of the survey results were generated through the said software.

Findings and interpretations from the gathered data were presented to and reviewed by the administrators of the Domus Pastorum. Such procedure, referred to as "member checking", is a qualitative technique used to establish the tenet of credibility in trustworthiness (Koelsch, 2013). Credibility involves establishing the truth of the research study's findings to support the accuracy and honesty of the findings. Such a procedure is viewed as an important component of validation in research, especially if involving qualitative methods.

## FINDINGS

**Figure 1**

*Code Theory Model of Q1: Expectations for Domus Pastorum*




Presented in Figure 1 are the key points from responses of the clergy as regards their expectations for Domus Pastorum based on coded segments. For (a) Physical Appearance/Ambience, there is a clamor of having an authentic home feel since it yielded the

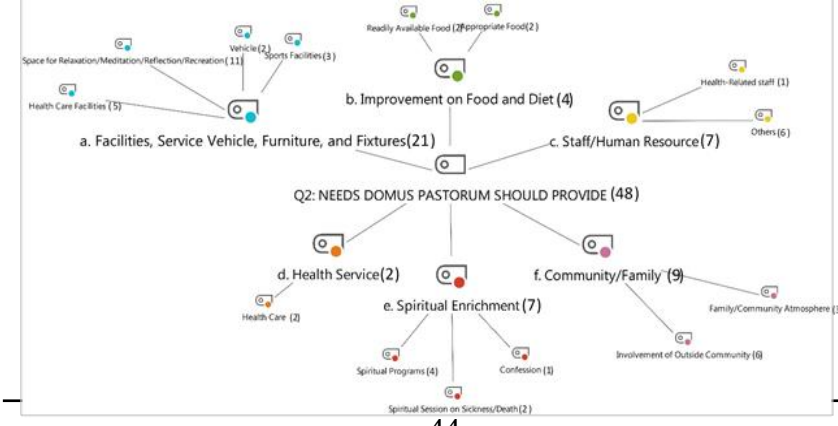
most number of responses, followed by having a clean space. For (b) Programs and Services, the provision of having a space for outdoor activities like sports, gym, and meditation, and other services, which include a spa/massage area and other ways to take care of the needs of resident-priests, are equally given emphasis. Meanwhile, health service-related provisions and providing room accommodations for would-be priest-visitors, are also emphasized (c) Amenities.

Comments and Suggestions were likewise included in the document. Among these is the conduct of benchmarking with other Bale Pari of other parishes, the conduct of a personal retreat, and a small group updating as regards new services and amenities. A call to extend the grounds covering the rest of the land of the Archdiocesan lot for the Domus Pastorum, where one can leisurely walk similar to the ground of retreat houses, was also given. It is also worth noting that a request to have a full-time Domus Pastorum Director to follow up the programs of the Domus Pastorum was mentioned. The income of SACOP Land tenants is likewise suggested to be given to Domus Pastorum to augment monthly maintenance and facilities regularly.

Meanwhile, a comment that funeral wakes should not be held within Domus Pastorum was also made mention.

**Figure 2**

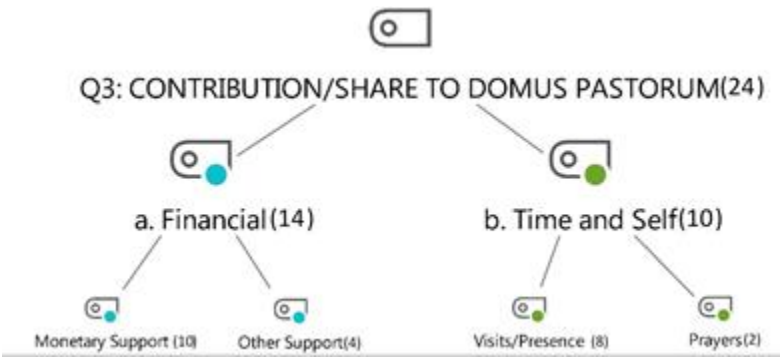
*Code Theory Model of Q2: Needs Domus Pastorum Should Provide*



Key points from responses of the clergy as regards the perceived needs that Domus Pastorum should provide are presented in Figure 2 based on coded segments. For (a) Facilities, Service Vehicle, Furniture, and Fixtures, there is a glaring clamor to provide for the need to have a space for relaxation/meditation/reflection/recreation. There is also a significant number who perceive that health care needs and the provision of sporting facilities should be addressed. On (b) Improvement of Food and Diet, having both appropriate and readily available food was made mention. Meanwhile, a majority of responses deem for the provision of healthcare-related personnel under (c) Staff/Human Resource. This need was also made mention of (d) Health Service. On (e) Spiritual Enrichment, the clergy seeks to address the need of coming up with programs for spiritual growth, which specifically includes sessions about the realities of sickness and the inevitability of death and confession. Lastly, while there is a call to nurture the family/community atmosphere in Domus Pastorum, a call for the involvement of the outside community, which includes laypersons, former parishioners, and other priests in the activities, is likewise called for (f) Community/Family.

**Figure 3**

*Code Theory Model of Q3: Contribution/Share to Domus Pastorum*

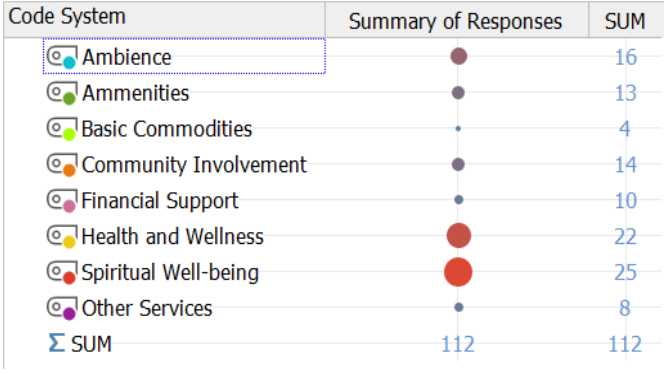


Most of the participants pledged their monetary support to Domus Pastorum while also signifying their initiative to visit and make their presence felt to the residents, as reflected in Figure 3 based on coded segments. Prayers and other forms of support, which include cooperation and moral support, were also made mention.

Suggestions were also included as regards contribution/share to Domus Pastorum. Some participants stated that a vicariate meeting would be held there to visit the elderly retired priests in order to socialize with the residents. It was further suggested that one meeting should be held there annually. As regards financial concerns, there was a call to have a monthly contribution from every priest, get a share from RQS, and make daily or regular contributions from the vicariate to contribute as fundraising for the improvement of the Domus Pastorium.

**Figure 4**

*Code Matrix Browser of Responses by Coded Segments*




Further analysis of data yielded the most prevalent common themes across all responses from the three survey questions, as presented in Figure 4. As can be perused, most responses lean towards Spiritual Well-being, which includes statements revolving around carrying out spiritual programs, spiritual sessions on sickness/death, prayer, confession, and providing a space for relaxation/meditation/reflection/recreation.

This is followed by responses relating to health and wellness, including health care and service, health facilities, provision of readily available and appropriate food, and hiring of personnel to look into the health of residents.

Responses on the physical structure were also significantly pointed out, specifically as regards the ambiance and available amenities of the said place, including the need for the manifestation of a family/community atmosphere as well as community involvement within the walls of Domus Pastorum.

Providing financial support is also among the common themes depicted based on the responses.

## DISCUSSION

Responses for the first survey question, "What are your expectations (physical appearance, service, amenities, etc.) for Domus Pastorum?" yielded key points on:

*(a) Physical Appearance/Ambience, and*
*(b) Programs and Services, and (c) Amenities*

For (a) Physical Appearance/Ambience, the participants expect to have proper ventilation, appropriate lighting, clean space, quality ambiance, and an authentic home feel. For (b) Programs and Services, the responses yielded include expectations of having space for outdoor activities and other services. Finally, (c) Amenities meanwhile revealed expectations of having a lounge area, a recreation area, health service, and room accommodation from the participants.

The change of one's habitual living conditions in favor of institutionalized living in a retirement home can be a stressful event.(Seifert & Schelling, 2018). Such is the reason why retirees expect to have a comfortable and worthwhile retirement place. Like all workers who have reached the limitations of their physical capabilities due to age, priests likewise expect to be in a place where worth staying after serving their vocation. Quite understandably, the amenities and commodities play a role in a

preferred retirement place. According to a study, retirees tend to be willing to reside in a retirement home only if good access to amenities is assured (Tan & Lee, 2018). Hanif (2018) additionally cites that the design, layout, and finishes of the retirement home highly affect the emotional state of the senior citizen, especially in terms of their feelings towards their previous home as well as their families and friends.

Key points derived from the survey responses to the second question, “What are the needs that you expect Domus Pastorum should provide?” include the following:

*(a) Facilities, Service Vehicle, Furniture, and Fixture*
*(b) Improvement in Food and Diet*
*(c) Staff/Human Resource*
*(d) Health Service*
*(e) Spiritual Enrichment, and*
*(f) Community/Family*

For (a) Facilities, Service Vehicle, Furniture and Fixture, themed responses concern health care facilities, space for relaxation/meditation/reflection/recreation, vehicle, and sports facilities. For (b) Improvement in Food and Diet, readily available food and serving of appropriate food are expected to be provided. Meanwhile, Health-related staff and personnel to take on other duties are expected to be addressed under (c) Staff/Human Resource. On (d) Health Service, health care concern is given a premium. Spiritual programs, a spiritual sessions on sickness and death, and confession are activities perceived to address (e) Spiritual Enrichment. Having a sense of community/family and the involvement of the outside community in the activities of Domus Pastorum are seen as ways that would address the needs of (f) Community/Family.

Results of a study by Tan & Lee (2018) revealed that retirees are likely to prefer a retirement home that could support their overall health and well-being within a safe and supportive senior-friendly environment. Similar expectations are also manifested by retired priests who also expect to provide for not only

spiritual-related needs but more so the basic physical and emotional needs individuals-of-age since the lack of privacy, loss of independence, and insecurity are other factors that affect satisfaction as regards the services and facilities offered at retirement homes (Hanif et al., 2018). It is viewed that multi-dimensional care for the physical, emotional, and spiritual well-being of the elderly is to be noted of given the results of a study by Canjuga (2018) which showed that elderly who live in retirement homes and have a worrisome health condition have a lower level of self-esteem, while the unmarried elders like priests, additionally manifested higher level of loneliness.

This can be addressed by ensuring the holistic health of Domus Pastorum residents by providing them with basic physiological needs as well as worthwhile activities to boost their emotional and spiritual well-being. This is parallel with Grzeskowiak's (2019) findings that senior citizens view retirement homes positively when they perceive the said place to have high service quality, identify with the occupant residents and thus build a sense of community, believe that living in the retirement home is consistent with their own lifestyle, and anticipate feeling satisfied with holistic well-being.

Meanwhile, responses to the third survey question, “What are you willing to share/contribute to make it a reality?” involved key points on:

*(a) Financial, and*
*(b) Time and Self*

Monetary support and other means of support are the response themes under (a) Financial, while visits/presence and prayers are the response themes under (b) Time and Self.

Such responses are parallel in addressing primary considerations of aging, including social, material, financial, and psychological are necessary to promote not only longevity but also successful aging in order to face societal challenges the elderly are facing (Edjolo et al., 2013).

**Conclusions and Recommendations**

This analysis shows that the participants of the said survey lean towards highlighting expectations and addressing needs on (1) improving the health and wellness of the residents of Domus Pastorum, (2) providing opportunities for recreational and sporting activities, and continuous spiritual growth which includes the provision of programs and facilities within Domus Pastorum, and (3) creating a family/community atmosphere within the walls of Domus Pastorum.

As a response, participants commit to working towards the realization of these expectations through (1) financial contributions and other means of support and (2) giving time to visits to let elders feel their presence and offer prayers for their well-being.

Comments and suggestions from the participant clergy should also be considered. In terms of facilities and commodities, a call to extend the grounds covering the rest of the land of the Archdiocesan lot for the Domus Pastorum, where one can leisurely walk similar to the ground of retreat houses, is also up for consideration. The conduct of benchmarking with retirement homes for priests of other parishes, the conduct of a personal retreat, and a small group updating as regards new services and amenities may be needed to be carried out.

In terms of administration, a request to have a full-time Domus Pastorum Director to follow up on the programs of the Domus Pastorum is sought.

On suggested activities, participants stated that a vicariate meeting would be held there to visit the elderly retired priests in order to socialize with the residents. It was further suggested that one meeting should be held there annually. The comment that funeral wakes should not be held within Domus Pastorum is also needed to be looked into.

Finally, for financial concerns, there was a call to have a monthly contribution from every priest, get a share from RQS, and have a daily or regular contribution from the vicariate as fundraising

for the improvement of the Domus Pastorium. Also, the income of SACOP Land tenants is suggested to be given to Domus Pastorum to augment monthly maintenance and facilities.

Priests live a very different lifestyle compared to most individuals. Yet, are also humans who share the same basic needs of health, spiritual, and emotional well-being. This remains true once limitations of the physical self eventually come in due to age. Thus, greater reflexivity about gerontology's use of "successful aging" and other normative models is needed (Martinson & Berridge, 2015), not only for priests but across all sectors of society.

Such declarations of expectations and commitments by the involved clergy is synonymous with the findings of a study that there is a need for change in the attitude of not only the community and the government but also the people on the way the elderly is depicted in society. Flora (2014) states that the elderly should be considered not as a burden to the community but rather as sources of learning points for society by looking into their valuable experiences. Furthermore, it should be the responsibility of society and the government to provide and ensure an improved and effective quality of life not only for retired priests but all retirees in return for their devotion to the vocation, faithfulness to the Ministry, and lifelong dedicated service to the country and humanity.

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# Impact of Housekeeping Extension Program to Aeta Senior High School of Villa Maria Integrated School, Porac, Pampanga

*Jovie D. Bondoc, Jona-Liza T. Cruz & Mercedes M. Lopez*

**ABSTRACT**

*This study aimed to identify the impact and effectiveness of the Housekeeping Extension Program to Aeta Senior High School students. It utilized a descriptive research design that used Likert-scale survey instrument. A total remuneration sampling technique was used to select the participants for this study, which included 23 Aeta Senior High students from Villa Maria, Porac, Pampanga. As a result, the training program has an 87% to 96% rate of success in acquiring soft and hard skills. The training program has a positive assessment from the respondents' experience with a mean of 3.22 that indicates that the training program is effective. The soft and hard skills acquired in the program are life-long skills and are very relevant to daily routine. Recommendation for the study is to assess the program annually to maintain the quality of the training. An annual update on the modules is also necessary to ensure updated learning information and to keep up with the fast changing system of the Hospitality Industry.*

**Key words:** *Aeta, housekeeping extension program*

## INTRODUCTION

The Aeta community is an indigenous group that resides in different parts of the Philippines, including Pampanga. Despite their rich cultural heritage, the Aeta community is among the most marginalized groups in the country, with limited access to basic services such as education and healthcare. The University of the Assumption, as a Catholic educational institution, is committed to

addressing the needs of marginalized communities and promoting social justice. One of the ways the university is fulfilling this commitment is through its adopted school program, which aims to provide support and assistance to schools in underprivileged areas.

Villa Maria Integrated School is one of the adopted schools of the University of the Assumption. It is located in a rural area in Barangay Villa Maria, Porac, Pampanga, While the school offers quality education to its students, there is a need to provide additional skills training to prepare them for future employment opportunities. The Housekeeping Extension Program aims to address this need by equipping the Senior High School Aeta students with the necessary knowledge and skills in housekeeping through proper training and development.

According to Stafford (2019) as mentioned by Craig, et al (2020) “Competency-based learning (CBL) is parsing of learning into specific chunks of skills and knowledge. It involves the creation of learning outcomes to clearly establish levels of mastery and assessments that allow learners to demonstrate their mastery. It is more output driven with a focus on the learner and the learning. “

Researchers have identified that any workplace skill requires a combination of hard and soft skills (van der Vleuten et al. 2019; Lyu and Liu 2021). They have also elucidated that there are shared components between hard and soft skills which could be seen as the bridge between them (Pieterse, et al 2016; Kuzminov et al. 2019). This indicates an opportunity for instructors and trainers in developing learners that allow understanding of both technical and non-technical skills.

It is noteworthy to mention that “training and development is an attempt to improve current or future individual performance by increasing an individual's ability to perform through learning, usually by changing the individual attitudes or increasing his/her skills and knowledge” (Abinaya, et al, 2020).

The training program is a joint collaboration of the Community Extension Office and the College of Hospitality and

Tourism Management. It has been an annual extension program since 2018. The main reason of the study is to evaluate the current activities provided, to get feedback from the participants to be used in the further improvement of the said program.

To know the impact of the Housekeeping Extension Program to Aeta Senior High School students, it specifically targets the following objectives:

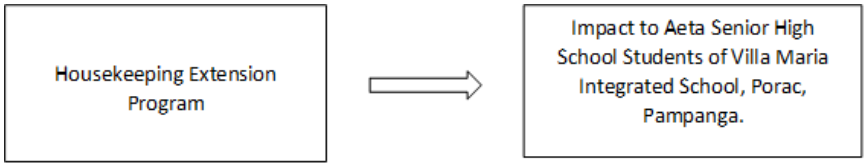
1. To measure the effectivity of the program to Aeta students in terms of:
   1.1 Skills acquired
   1.2 Training program
   1.3 Self-Development
2. To determine if the program acquired skills is useful to daily activities.

Substantially, this study will measure the effectiveness of the Housekeeping Extension program to Aeta Senior High School students from Villa Maria Integrated School, Porac, Pampanga. The study center focused on the gathered information from students in determining the skills they acquired, the assessment on the training program and self-development. Furthermore, the study was limited only on the indicators mentioned and did not discuss other indicators.

There are groups of people who will benefit from this study. The Senior High School students from Villa Maria Integrated School, The teachers and administrators from Villa Maria Integrated school, The University of the Assumption Community Extension Program and the College of Hospitality and Tourism Management. The result of the study will be beneficial to the students since they will know the effectiveness and impact of the training program to their skills and personal development. The teachers and administrators from Villa Maria can use the study results as a basis of continuity of participation of Aeta students in the program. The Community Extension Office and the College of Hospitality and Tourism Management can use the study for further improvement of the training program.

As for the research paradigm, the study's conceptual framework is shown in the figure below. The figure shows that the study aims to determine the impact of Housekeeping Extension program to Aeta Senior High students.

**Figure 1**
*Paradigm of the study*




## METHOD

A combination of qualitative and quantitative descriptive research was employed to collect quantifiable information to the respondents who are involved in the Housekeeping Extension Program.

The primary data collection instrument for this study was a questionnaire. It was divided into several sections. The questionnaire and the informed consent. The informed consent includes full information about the study and the participant's contribution and role. The questionnaire includes Likert scales and closed-ended questions. It was subdivided into three sections, skills acquired, training program and self-development. The instrument of the study was a researcher made with indicators on different housekeeping skills.

In this study, the researchers utilized complete remuneration. All 23 Aeta Senior High School students who participated in the housekeeping training program of the academic year 2023-24 were all asked to answer the survey. Table 1 is the demographic of the respondents. It shows that 61% of the respondents are female and 65% are within the age range of 18-20 years.

**Table 1**
*Respondents' demographics*

| Sex | *f* | % | Age | *f* | % |
|---|---|---|---|---|---|
| Male | 9 | 39 | 18-20 | 15 | 65 |
| Female | 14 | 61 | 21-22 | 8 | 35 |
| **Total** | 23 | 100 | **Total** | 23 | 100 |

The researchers formulated the research survey questions, validated and pilot tested it before handling the instrument to Community Extension Office of the university and the office handed the instruments to the teachers of Villa Maria Integrated school who assisted the students in the evaluation and assessment of the training program. In this manner, the respondents were able to evaluate the program objectively.

The researchers assured the respondents that their personal information will remain confidential during and after the transcription of the data so that their identities will remain hidden. Every respondent's involvement is entirely voluntary, and have the option to participate or not. Informed consent was also given to the respondents. All information gathered will be kept for three years before being properly disposed of.

The data received from respondents were examined by the researchers utilizing descriptive statistics. Descriptive statistics are used to describe data in an ordered manner by describing the connection between variables in a sample or population. The frequency and percentage were used in the socio demographics as well with the soft and hard skills. The mean was used in the Likert scale computation for the training program and self-development indicators. The Likert scale equivalent is as follows:

**Table 2**
*Instrument descriptors*

| Numerical rating | Scale of Margin | Responses | Verbal Interpretation |
|---|---|---|---|
| 1 | 1.00-1.75 | Strongly Disagree | Highly Ineffective |
| 2 | 1.76 -2.50 | Disagree | Ineffective |
| 3 | 2.51 -3.25 | Agree | Effective |
| 4 | 3.26 – 4.00 | Strongly Agree | Highly Effective |

## RESULTS and DISCUSSION

Table 3 below presents the soft skills acquired by the respondents. It shows that the soft skills were all acquired by the respondents as it ranges from 87% to 96%. time management, self-discipline, teamwork and Honesty were acquired by 22 out of 23 The skills respondents making it 96% while 20 out of 22 acquired skills like attention to detail and multitasking. This implies that hands on training can give an optimum to maximum acquisition of soft skills to the respondents. In connection with the study of Hadiyanto, (2021), it was stated that soft skills and hard skills development were not optimal through online learning.

**Table 3**
*Soft skill acquired by the respondents*

| Indicators | f | % |
|---|---|---|
| Time Management | 22 | 96 |
| Attention to Detail | 20 | 87 |
| Communication Skills | 21 | 91 |
| Self Discipline | 22 | 96 |
| Trustworthiness | 21 | 91 |
| Multitasking | 20 | 87 |
| Teamwork | 22 | 96 |
| Honesty | 22 | 96 |

Table 4 presents the hard skills acquired by respondents. It shows that 20 out of 23 respondents acquired the hard skills cleaning and sanitizing bedroom. Majority of the hard skills were acquired by 22 out of 23 respondents making it 96%. This only indicates that the training program has 87% to 96% rate of success when it comes to the hard skills acquired.

According to Boyle (2022), Hard skills are acquired through formal education and training programs. Overall, the training program is effective in acquiring hard and soft skills.

**Table 4**

*Hard skills acquired by respondents*

| Hard Skills | *f* | *%* |
|---|---|---|
| Bedmaking | 22 | 96 |
| Cleaning and Sanitizing Bedroom | 20 | 87 |
| Cleaning and Sanitizing Bathroom/Toilet | 22 | 96 |
| Cleaning Common Areas | 22 | 96 |
| Mopping | 22 | 96 |
| Sweeping | 22 | 96 |
| Carpet Cleaning | 22 | 96 |
| Chemical Handling | 22 | 96 |
| Vacuuming | 22 | 96 |
| Window Cleaning | 22 | 96 |
| Floor Cleaning | 21 | 91 |
| Ceiling and Wall Cleaning | 21 | 91 |

Table 5 presents the respondents' evaluation on the training program. It blatantly shows that they all agree with the indicators. The mean ranges from 2.83 to 3.56 with verbal interpretation of Agree to Strongly Agree. All indicators of the training program have positive assessment from the respondents' experience. The average mean of 3.22 with verbal interpretation of Agree suggests that the training program is effective. This implies that the training is desirable for acquiring skills. This is in relation with the study of Smith, et al (2019) that training" has emphasized readiness, demonstrable skills, and immediate feedback as mentioned from the study of Craig, et al (2020).

"Competency-based learning (CBL) is parsing of learning into specific chunks of skills and knowledge. It involves the creation of learning outcomes to clearly establish levels of mastery and assessments that allow learners to demonstrate their mastery. It is more output driven with a focus on the learner and the learning. "(Stafford, 2019)

**Table 5**
*Respondents' evaluation on the training program*

| Indicators | Mean | Interpretation |
|---|---|---|
| 1. Training is organized. | 3.35 | Strongly Agree |
| 2. Training is carried-out efficiently within the time allowed. | 2.96 | Agree |
| 3. Student trainees are treated in a helpful way. | 3.17 | Agree |
| 4. Student trainees are treated in a cooperative way. | 3.13 | Agree |
| 5. Student trainees are supervised to make certain that they present and maintain a professional image. | 3.13 | Agree |
| 6. Student trainees are supervised to make certain that they are polite and helpful. | 3.13 | Agree |
| 7. Student trainees are supervised to make certain that they are regularly present. | 3.13 | Agree |
| 8. Student trainees are supervised to make certain that they are punctual and work the required hours. | 3.44 | Strongly Agree |
| 9. Student trainees are supervised to make certain that the procedures are carried-out according to instructions. | 3.39 | Strongly Agree |
| 10. Student trainees are given a variety of opportunities to share their ideas and suggestions on how to improve the flow of work and the quality of service. | 3.30 | Strongly Agree |
| 11. Student trainees are clearly told what they have to do, the amount of time they have for each task, and what standards they have to achieve. | 3.56 | Strong Agree |
| 12. Student trainees are supervised to make certain that the standard of work performance required by house policy is achieved. | 3.13 | Agree |
| 13. Student trainees are observed while they do their work and feedback is given in a clear and helpful way. | 3.26 | Strongly Agree |
| 14. Corrective coaching is given to student trainees when necessary and in a clear and helpful way. | 3.22 | Agree |
| 15. Student trainees are supervised to see whether they have the necessary skills and time to achieve the required quality of service. | 3.35 | Strongly Agree |
| 16. Student trainees are supervised while carrying-out their work and any weaknesses in the quality of their work which require training are identified. | 3.44 | Strong Agree |

| Indicators | Mean | Interpretation |
|---|---|---|
| 17. It is made certain that relevant information from HM faculty members are received and asked upon promptly. | 3.04 | Agree |
| 18. The level and pace of the training session matches the needs of the students taking the training. | 3.09 | Agree |
| 19. The students to be trained is fully briefed before the training begins on what will be taught and practiced. | 2.83 | Agree |
| 20. The task to be taught is broken down into well-organized stages in order to make it easier for the students to understand and learn. | 3.44 | Strong Agree |
| 21. Each stage is explained and demonstrated in a clear and helpful way the students are allowed to practice after each demonstration. | 3.04 | Agree |
| 22. The student trainees are encouraged to ask questions and participate throughout their training. | 3.39 | Strongly Agree |
| **Average** | **3.22** | **AGREE** |

Table 6 shows the respondents self-improvement and development. The table presents the different indicators under self-development. Majority of the respondents answered Agree on almost indicators. The average mean of 3.17 suggests a verbal interpretation of Agree. This indicates that respondents have self-improvement and development after engaging with the training program. This supports the study of Abinaya, et al (2020) stating that training have positive impact on self-development of individuals.

**Table 6**
*Respondents' self-development*

| Indicators | Mean | Interpretation |
|---|---|---|
| 1. Realistic and challenging goals for self-improvement are planned. | 3.26 | Strongly Agree |
| 2. A plan is drawn up to show how goals are going to be achieved. | 3.08 | Agree |
| 3. Feedback is obtained from the faculty members, and this is compared with one's own assessment of performance. | 3.17 | Agree |
| 4. Long-term career aims are identified and plans are made to achieve any further self-development which may be needed. | 3.17 | Agree |
| **Average** | **3.17** | **AGREE** |

Table 7 depicts the usefulness of acquired skills to daily activities of the respondents. It shows that there is 100% relevance of the skills to day-to-day activities. This implies that soft and hard skills acquired in the program are life-long skills and are very relevant to daily routine. Housekeeping plays a significant role in maintaining a family's house a safe, clean, and inviting home.

**Table 7**
*Usefulness of acquired skills to daily activities*

| Answer | Frequency | Percentage (%) |
|---|---|---|
| Yes | 23 | 100 |
| No | 0 | 0 |

## Conclusions and Recommendations

In light of the results, the following were concluded:

The training program has an 87% to 96% rate of success in acquiring soft and hard skills. The training program has a positive assessment from the respondents' experience with a mean of 3.22 that indicates that the training program is effective. The soft and hard skills acquired in the program are life-long skills and are very relevant to daily routine. Based on the conclusion that the training program has a high success rate in acquiring both soft and hard skills, as well as receiving positive assessments from respondents, here are some recommendations:

To further achieve a higher success rate, the researchers recommend that the program should be reviewed and re-evaluated by experts to level up the competencies and target objectives. A longer immersion training for the students should be implemented focusing on the multitasking skills activity since this is the soft skills that gained the lowest rate.Given the high success rate of the training program, it is recommended that organization continue to invest resources into its development and implementation. This may include allocating sufficient funding for training materials to ensure the program's continued effectiveness.

It is also recommended that the evaluation of the program should be assessed annually to maintain the quality of the training. An annual update on the modules is also necessary to ensure updated learning information and to keep up with the fast-changing system of the Hospitality industry. Consider expanding the reach of the training program to reach a broader audience. This could involve offering the program to individuals in different demographics or geographic locations who could benefit from acquiring the identified soft and hard skills.

Furthermore, trainers should also keep themselves updated with the latest trend in the housekeeping system of the hospitality industry and to partners with accrediting institutions like TESDA to match the program with the target competencies set by the institution and link access to additional resources and expertise, enriching the overall learning experience for participants. Emphasize the importance of lifelong learning and continuous skills development beyond the training program. Encourage participants to apply the skills they have acquired in their daily routines and provide resources or opportunities for ongoing learning and development.

Lastly, future researchers may consider extending the study by adding variables to the objectives or implementing this research in a different locale with a different set of profile respondents.

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# UA community engagements during the COVID-19 pandemic

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**ABSTRACT**

*As the first Archdiocesan Catholic University in Asia, University of the Assumption (UA) is committed by being living witnesses of Gospel values by assuming leadership in community development through active involvement in the most pressing issues of the nation and of the world. In line with that, this study focused on UA's best practices for community engagement during the COVID-19 pandemic for the school years 2020-2021 and 2021-2022.*

*The study employed a descriptive methodology, utilizing semi-structured interviews and document analysis to identify and analyze UA's community engagement strategies through its Community Extension Office, and to evaluate their effectiveness in addressing the needs of partner communities. The study found that UA successfully implemented various community engagement practices, including the provision of food aid and medical supplies, online education and training programs, and partnerships with local government and non-governmental organizations. These practices were effective in meeting the needs of vulnerable partner communities impacted by the pandemic. The study's findings offer insights into how Catholic institutions can effectively integrate their mission and values into their community engagement efforts, providing a model for other institutions seeking to promote social responsibility and the common good during and beyond the COVID-19 pandemic.*

**Key words:** *Aeta, housekeeping extension program*

## INTRODUCTION

When bad things happen, most people ask the question "why?". Maybe, that is the normal rational reaction as human beings. Human beings want to have a rational explanation why things, especially bad things happen. Most probably, that was the common reaction of most people in the outbreak of the COVID-19 pandemic. Some resorted to blame game pointing the fault to China

since that is where it all started. Some thought that maybe it is the sign of the end of the world. Some may also have thought that humans are being punished for their sins. On the other hand, some tried to deny that there is really COVID-19 pandemic. Denial goes hand-in-hand with our fallen human condition (Fournier, 1992, 27). But the most important question in this study is, "what is the right Catholic response to the outbreak of COVID-19 pandemic?"

The right Catholic response to the outbreak of COVID-19 pandemic is not asking "Why" but asking "What?" What can we do?" (Wright, 2020, 3). That is what the people in the Bible have done when they were facing crisis. Like in the Old Testament, when Israelites were enslaved by Egypt, "they are not looking backwards at what might have caused the problem. They are looking forward to see what needs to be done" (Wright, 2020, 30). This is what being a Catholic Christian should be. Catholic Christians are sent on a mission, that is, to love as Jesus Christ did. And all Catholic Christians have a unique contribution that they can give. In the eyes of God, it matters little or it doesn't really matter how big or small your contribution is. What matters is how much genuine love you put in your contribution. Whatever the 'Christian' response to Covid 19 should be, it should be one in which all Christians can join (Wright, 2020, 33).

In this context, the University of the Assumption (UA) in Pampanga has implemented various best practices for community engagement during the pandemic, as a pastoral and educational response to the challenges faced by its surrounding communities. This research aims to identify and analyze the best practices implemented by UA through its Community Extension Office during the pandemic, and to evaluate their effectiveness in addressing the needs of partner communities. The study provides valuable insights and recommendations for other universities and institutions seeking to improve their community engagement efforts during the pandemic and beyond.

This research aims to identify and analyze the best practices implemented by UA in community engagement during the

pandemic. Specifically, it seeks to answer the following research questions:

1. What are the best practices implemented by UA in community engagement during the pandemic?
2. How effective were these best practices in addressing the needs of the surrounding communities?
3. What lessons can be learned from UA's community engagement efforts during the pandemic?

Community engagement in higher education refers to the various ways in which universities and colleges connect with the communities in which they are located, to address social, economic, and cultural challenges faced by those communities. Community engagement initiatives involve collaboration and partnership between academic institutions and community members, leaders, and organizations. Collaboration in ministry is a response to the call received in baptism and confirmation to recognize the Spirit's charisms in all (Cooper, 1993, 6). By virtue of baptism, all Christians share in the priesthood of Christ. As priests, ministers fulfill the role of compassionate servant (Malony, 1998, 33). Baptism always implies two things: communion in and with the Church; and mission to the world (Chaput, 2001, 16). The Church lives by the acts of individuals done within that act by which she is founded (Rahner, 1963, 91). The Church is founded on the salvific, unconditional, sacrificial, selfless love of God in the ultimate sacrifice of Jesus Christ. The acts of individuals in community engagement should be founded on that love. It is because, without an interior life and what we call "love of justice" most communities just serve themselves (Rohr, 1991, 39).

Community engagement can take many forms, including research-based community service, and outreach programs that provide education, health care, and social services to the surrounding community. This approach recognizes that higher education institutions have an obligation to contribute to the social welfare of their communities, while also offering valuable opportunities for students, faculty, and staff to engage with and learn from local residents and organizations. The COVID-19

pandemic has further highlighted the importance of community engagement in higher education, as universities and colleges around the world have had to adapt to new challenges and find ways to support their communities during these difficult times.

The COVID-19 pandemic has highlighted the importance of community engagement and solidarity in addressing global crises. The encyclical letter “Fratelli Tutti” by Pope Francis emphasizes the importance of these themes, noting that "we cannot remain indifferent to suffering; we cannot allow anyone to go through life as an outcast" (2020, 64). The letter emphasizes the need for a culture of encounter and dialogue, in which individuals and communities work together to build a more just and fraternal society. Another relevant encyclical letter “Caritas in Veritate” by Pope Benedict XVI emphasizes the importance of solidarity and the common good in economic and social development. The letter notes that "the economy needs ethics in order to function correctly" (2005, 45), emphasizing the need for a more ethical and sustainable approach to economic and social development. These encyclicals are particularly relevant in the context of the pandemic, which has exposed deep social and economic inequalities and highlighted the need for collective action to address these issues.

The encyclical letter “Laudato Si” by Pope Francis also emphasizes the interconnectedness of all living beings and the need for responsible stewardship of the planet. While not directly related to the pandemic, the themes of the letter are particularly relevant in the context of community engagement during the crisis. The letter notes that "interdependence obliges us to think of one world with a common plan" (2015, 164), emphasizing the importance of working together to address global challenges. The pandemic has highlighted the need for a more sustainable and equitable approach to development, and community engagement can play an important role in promoting these goals. One way of understanding sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Maclean, 2009, 208).

These encyclical letters provide a rich resource for understanding the importance of community engagement and solidarity in addressing global challenges such as the COVID-19 pandemic. They emphasize the need for a more just and fraternal society, a more sustainable approach to development, and a culture of encounter and dialogue that promotes the common good. By drawing on the insights of these letters, we can develop more effective strategies for community engagement during the pandemic and beyond.

## METHOD

This study employed a descriptive research method to present the University of the Assumption's best practices in community engagement during the pandemic. Relevant programs and initiatives were identified through careful examination of documents such as CEO programs, plans of action, and progress and evaluation reports. Additionally, feedback from partner communities were analyzed by studying evaluation reports and conducting interviews to gain a more comprehensive understanding of the impact of the university's extension and outreach program.

## FINDINGS

### A. Extension Programs

The UA CEO facilitated the following extension programs and identified the challenges, opportunities, innovation, and impact.

| Programs | Challenges | Opportunities | Innovation | Impact |
|---|---|---|---|---|
| **1. Health Education+ Accessible Livelihood (HEAL) for the UA Tri-wheeler and Tricycle drivers** | a. Loss of income among Tri-wheeler and tricycle drivers due to suspension of classes and implementation of Online Classes | a. Provided temporary relief<br><br>b.Collaboration between UA, San Jose Parish, and Barangay Council | a. Mobile Relief distribution<br><br>b. Pool of volunteers was organized in the Barangay | a. Source of comfort<br><br>b. Sustained families during the locked down<br><br>c. Enhanced Bayanihan |

| Programs | Challenges | Opportunities | Innovation | Impact |
|---|---|---|---|---|
| **1. Health Education+ Accessible Livelihood (HEAL) for the UA Tri-wheeler and Tricycle drivers** | b. Limited involvement of the faculty and non-involvement of students<br><br>c. Lack of Financial budget<br><br>d. Prone to be infected / Heath risk<br><br>e. Lack of opportunity to go to Mass | Regularity of the program<br>c. Tapped UA Community and Outside donors<br><br>d. Strict compliance with Covid-19 protocols<br><br>e. Integrate Spiritual Formation during sessions | c. Joint project with the Adrian Dominican sisters<br>d. Promoted the importance of Vaccination<br><br>e. Talk on Catechesis, Recollection, and Bible for Faith & Action Sharing Team (BFAST) | and spirit of volunteerism<br><br>d. Created a small/strong community of Front liners<br><br>e.Resourceful and flexible<br><br>f. Health Consciousness & Balanced diet<br><br>g. Prayer became our source of strength and hope during the Pandemic<br><br>h. Learn basic prayer and shared our experiences |
| **2.KayadUAngan Youth Formation (KYF) Online Extension Program Via Google Meet and Zoom** | a. Youth in San Jose are experiencing mental distress due to long months of being locked down at home<br><br>b. Technical issues – (Poor connection, No load, Low quality of gadgets) | a. Online Youth formation is accessible<br><br>b. Easy/quick promotion of the Webinars<br><br>c. Online kumustahan | a. Youth leaders capacitated in terms of organization and participation<br><br>b. Parish intervention<br><br>c. Webinars & Online interaction | a. Camaraderie support system among youth members<br><br>b. Became responsible for decision making<br><br>c. Motivated by the process and series of webinars<br><br>d. Enhanced leadership skills through webinars |

| Programs | Challenges | Opportunities | Innovation | Impact |
|---|---|---|---|---|
| | c. Limited interaction and lack of exposure outside | | | e. Holistic development<br><br>f. Developed relationship with God, co-youth and Mother Earth |
| **3. Technological & Educational assistance to the Partner schools** | a. Adjustment to the Online platform<br><br>b. Unprepared for the online classes | a. Shared knowledge and expertise | a. Development of Schools Website<br><br>b. Application of Google workspace for Education Fundamentals<br><br>c. Training and orientation | a. Provided school website and Google workspace<br><br>b. Capacitated faculty and administrators |

In response to the challenges posed by the COVID-19 pandemic in the immediate community, the first program, Health Education + Accessible Livelihood (HEAL) for the UA Tri-wheeler and Tricycle drivers, aimed to provide temporary relief to drivers who lost their income due to the suspension of classes and the implementation of online classes. The challenges in this program included the strict protocols and limited involvement of the faculty and students, as well as the lack of financial budget. However, the program provided a source of comfort and sustained families during the lockdown, developed a prayerful attitude, and deepened their relationship with one another while promoting the importance of vaccination and enhancing health consciousness among the drivers.

The second extension program, KayadUAngan Youth Formation (KYF) Online Extension Program via Google Meet and Zoom, addressed the mental distress experienced by youth in San

Jose due to the long months of being locked down at home. The main challenge in this program was the technical issues encountered by the youth, such as poor connection, no load, and low-quality gadgets. Nonetheless, the program was accessible and promoted a camaraderie support system among youth members, while also capacitating youth leaders in terms of organization and participation. The series of webinar help them develop their sense of connection. It also broadened their understanding of self and healthy relationship with God and the rest of creation.

The third extension program, Technological & Educational assistance to the Partner schools, aimed to assist partner schools in adjusting to the online platform and applying Google workspace for Education Fundamentals. The main challenge in this program was the unpreparedness of the schools for online classes. However, the program shared knowledge and expertise, providing a school website and Google workspace, and capacitated faculty and administrators. The innovation in this program included the development of schools' websites and the application of Google workspace for Education Fundamentals.

All the findings suggest that UA's community engagement programs during the pandemic faced various challenges, but also created opportunities for innovation and impact. The themes that emerged from the analysis of the findings include temporary relief, promotion of health consciousness, spiritual formation, technical and educational assistance, and innovation in website development and Google workspace application.

The University of the Assumption (UA) launched three extension programs during the pandemic aimed at addressing the challenges brought about by the COVID-19 pandemic. This report presents the challenges encountered by each program, the innovations implemented to overcome the challenges, and their impact on the community.

In summary, the University of the Assumption's programs during the pandemic faced various challenges that were addressed by the innovations implemented by the university. The impact of

these programs is evident in the sustained relief provided, enhanced community spirit, and capacity-building of various stakeholders. These programs highlight the importance of community engagement and innovation during challenging times.

## B. OUTREACH PROGRAMS

The University of the Assumption Community Extension Office organized an Outreach Program consisting of three activities: Mobile Relief Distribution, Community Pantry, and Environmental Awareness Advocacy Outreach at UA ECO Farm.

| Program | Challenges | Opportunities | Innovation | Impact |
|---|---|---|---|---|
| **1. Mobile Relief Distribution** | a. Limited involvement of Faculty and Non - involvement of student-volunteers<br><br>b. Increased number of covid-19 positive<br><br>c. Health risk<br><br>d. Lack of resources | a. Tapped outside human resources<br><br>b. Identified the most vulnerable and in great need<br><br>c. Strict compliance with health and safety protocols<br><br>d. Donation drive | a. Mobile Relief distribution<br><br>b. Multi-sectoral<br><br>c. Secured full vaccination of all recipients<br><br>d. University wide-efforts | a. Food security during locked down<br><br>b. Provided alternative resources<br><br>c. Temporary relief and provided safety |
| **1. Community Pantry** | a. Irregularity of sponsors and donors | a. Call for donations to the alumni and stakeholders | a. Weekly and multi-sectoral | a. Healthy and safe pantry |

| Program | Challenges | Opportunities | Innovation | Impact |
|---|---|---|---|---|
| **2. Environmental Awareness Advocacy Outreach at UA ECO Farm** | a. Lack of commitment of the recipients/ volunteers | a. Additional resources for the families<br><br>b. Mental and spiritual wellness | a. Consistency of attendance among volunteers | a. Environment-al awareness<br><br>b. Community gardening became enjoyable |

The Mobile Relief Distribution involved distributing food, groceries, and cash donations to partner communities in Barangay Del Pilar, San Jose, San Felipe, and San Jose Matulid, personally delivering these to the residents' respective houses. The UA College of Nursing and Pharmacy alumni also donated medical supplies to the barangay's health workers and frontliners. The program faced challenges such as limited involvement of faculty, non-involvement of student volunteers, and lack of resources, but the program tapped outside human resources, identified the most vulnerable and in great need, and strictly complied with health and safety protocols. Through a donation drive and multi-sectoral efforts, the program provided mobile relief distribution to the community, resulting in food security during the lockdown and alternative resources.

The Community Pantry aimed to establish and sustain a healthy and eco-friendly community pantry for the poor sectors in the immediate barangays during the pandemic. The program was conducted weekly and was multi-sectoral, promoting a healthy and safe pantry. The program faced challenges such as the irregularity of sponsors and donors, but it provided an opportunity to tap generous alumni inside and outside the country.

The Environmental Awareness Advocacy Outreach at UA ECO Farm aimed to promote mental wellness, commitment, and environmental awareness among the volunteers and recipients. The program provided additional resources for families and

cultivated values that demonstrate responsible stewardship, engaging students, employees, parents, and alumni in ecological education through Christian formation and extension services for the sustenance and protection of all forms of life. Volunteers regularly participated in environmental projects, such as mushroom training, food for work through community gardening and vermicomposting, and selling eco-products produced by the UA SPARK volunteers. According to them, community gardening and environmental activities became enjoyable because they worked together and created bonding moments.

The impact of the Outreach Program during the pandemic was significant. Mobile Relief Distribution provided food security during the lockdown, alternative resources, and secured full vaccination of all recipients. The Community Pantry served as a source of additional resources for the community, while the Environmental Awareness Advocacy Outreach at UA ECO Farm promoted mental wellness, commitment, and environmental awareness among the volunteers and recipients. Despite the challenges, the Outreach Program's innovative approach and strict compliance with health and safety protocols contributed to its success and positive impact on the community.

Despite the challenges, the Outreach Program's innovative approach and strict compliance with health and safety protocols contributed to its success and positive impact on the community, providing food security during the lockdown, alternative resources, and securing full vaccination of all recipients.

## DISCUSSION

Based on the findings of this research, the University of the Assumption (UA) implemented several programs to address the challenges brought by the COVID-19 pandemic in its immediate community. The programs included Health Education and Accessible Livelihood (HEAL) for the UA Tri-wheeler and Tricycle drivers, KayadUAngan Youth Formation (KYF) Online Extension Program, and Technological and Educational Assistance to the Partner Schools.

One of the primary challenges identified was the loss of income among tri-wheeler and tricycle drivers due to the suspension of classes and the implementation of online classes. To address this, the UA implemented the HEAL program that provided temporary relief to the affected drivers. The program was made possible through the collaboration between UA, San Jose Parish, and Barangay Council, and it was sustained by tapping the UA community and outside donors. The program also promoted the importance of vaccination and health consciousness among the drivers, thus preventing the transmission of the virus. The program not only tried to address the financial needs of the recipients but more importantly, it tried to address also the social and spiritual needs of the recipients. This is trying to address integral human development which is a development that serves the total person, in all dimensions, including the spiritual (Wostyn, Living Like Jesus, 2004, 94).

Another challenge identified was the mental distress experienced by the youth in San Jose due to the long months of being locked down at home. The KYF Online Extension Program was implemented to address this challenge. The program was accessible to the youth and allowed easy and quick promotion of webinars. It also served as a support system among youth members and motivated them through the process and series of webinars. There are many possible reasons for mental distress due to the long months of being locked down at home. From the Christian perspective, one of the main reasons, if not the main reason, is the unconditional, overflowing love of God is blocked. Through the KYF program, the recipients were spiritually guided to experience the unconditional, overflowing love of God. One way of describing the love of God is “God loves us as a Father loves a child; his love is so great we can almost say that it is insane – at least by human standards. His love for us is incredibly generous.” (Finley & Pennock, 1977, 85). Although experiencing this kind of love is always challenging especially in the time of the Covid 19 pandemic, but through the KYF program, the recipients are reminded that this experience is always possible no matter what one experiences. Catholicism is convinced that our experiences make visible and palpable the invisible and gracious love of God for

us (De Mesa & Cacho, 2011, 41). Maturity is not about what comes into your life, but how you handle it (Connor, 2003, 100). Through the KYF program, the participants were spiritually guided to have a mature way of handling their present experiences, and in the process, experiencing the unconditional love of God. Spiritual guidance is founded on the theological perspective that growth in faith is not just individual, it is wholly communal (Reed, 2011, 137). That is what the KYF program tried to do. It provided a good community where it addressed the mental distress of the participants by truly listening and learning from each other's experiences. Listening means focusing our attention and energy on the other (Padovani, 2006, 23). The KYF program also tried to create an atmosphere of a spirituality of caring which is the shared construct of those within a given community who support, nurture, guide, teach, and learn in caring, hopeful ways (Myers, 1997, 63).

The unpreparedness of partner schools for online classes posed a significant challenge. To address this, the UA provided technological and educational assistance to the partner schools. The program involved the development of schools' websites and the application of Google workspace for Education Fundamentals. It also capacitated faculty and administrators through training and orientation. Because of the Covid 19 pandemic, face to face classes became very risky and as a consequence, online classes became the best option for some time. It is because education is essential, no matter how great the challenge is like the Covid 19 pandemic. According to John Dewey, "education is a continuous process of experiencing and of revising or reorganizing experiences" which connotes that education is a continuous process of growth and development (Gregorio, 1976, 3). Through the program "Technological & Educational assistance to the Partner schools", partner schools of UA were given support to be more effective in educating students.

The UA's innovative programs and initiatives had a significant impact on the community. The HEAL program provided temporary relief to the affected drivers and promoted health consciousness, while the KYF Online Extension Program served as a support system among youth members and motivated them. The

Technological and Educational Assistance to the Partner Schools enabled the schools to transition smoothly to online classes and capacitated faculty and administrators. The programs also enhanced bayanihan and volunteerism spirit, created a small but strong community of front liners, and sustained families during the lockdown.

The Outreach Program described in the findings is a commendable effort to address the pressing needs of the community during the pandemic. The Mobile Relief Distribution initiative aimed to provide food security and alternative resources to vulnerable communities, while the Community Pantry aimed to establish and sustain a healthy and eco-friendly pantry for the poor sectors. The Environmental Awareness Advocacy Outreach at UA ECO Farm aimed to promote environmental awareness and mental wellness. Although the Mobile Relief Distribution initiative and the Community Pantry programs gave a lot of help to others in great need, lots of things need to be done. As the wise Chinese saying goes: “Give a man a fish and you feed him for a meal. Teach him how to fish and you feed him for a lifetime.” (Wostyn, Believing Unto Discipleship, 2004, 97) That saying points to the deeper problem, the deeper need that we need to address for greater sustainable development to happen. On the other hand, these 2 programs can be seen as part of the gradual process that leads to that direction. Regarding the last outreach program which is Environmental Awareness Advocacy Outreach at UA ECO Farm, this program is maybe one of the positive things that Covid 19 pandemic brought. Because of forced locked down, many people became appreciative of plants and became more in touch with nature. Covid 19 pandemic is only a temporary problem but the problem about the exploitation of nature is maybe humanity’s number one problem in saving the planet. What we now need is to get in touch with nature, feel its wound and realize that we cannot continue wounding it without wounding ourselves (Salonga, 2011, 134).

One of the key strengths of the Outreach Program was its multi-sectoral approach, which involved collaboration among different groups, such as alumni, faculty, students, and parents. This allowed for a more comprehensive and sustained effort to

address the various needs of the community. Additionally, the Outreach Program's focus on strict compliance with health and safety protocols ensured that the program did not become a potential source of COVID-19 transmission.

The challenges faced by the Outreach Program, such as limited involvement of faculty and non-involvement of student volunteers, highlight the need for sustained efforts and resources to achieve program goals. The irregularity of sponsors and donors for the Community Pantry also emphasizes the importance of securing sustained support for programs that aim to address community needs.

In sum, the Outreach Program's innovative approach and strict compliance with health and safety protocols contributed to its success and positive impact on the community. The program's efforts to provide food security during the lockdown, alternative resources, and secure full vaccination for all recipients were significant contributions to the community's welfare. The program also helped promote mental wellness, commitment, and environmental awareness among volunteers and recipients. The Outreach Program is an inspiring example of how a community can come together to address pressing needs during challenging times.

The UA's best practices on community engagement during the pandemic demonstrated the institution's commitment to addressing the challenges brought by the COVID-19 pandemic in its immediate community. The programs implemented were innovative and had a significant impact on the community, providing relief and support while promoting health consciousness and capacity building. These programs can serve as a benchmark for other Higher Educational Institutions (HEIs) to improve their community engagements and foster a culture of excellence.

**Conclusion and Recommendations**

In conclusion, the University of the Assumption has implemented several community engagement extension and outreach programs during the COVID-19 pandemic to address the challenges faced by the immediate community. Despite the challenges, the programs made a positive impact on the community

by providing temporary relief, promoting health consciousness, addressing mental distress, assisting schools, and raising environmental awareness.

Based on the discussion, it can be concluded that the University of the Assumption (UA) implemented several programs to address the challenges brought by the COVID-19 pandemic in its immediate community. The programs included Health Education and Accessible Livelihood (HEAL) for the UA Tri-wheeler and Tricycle drivers, KayadUAngan Youth Formation (KYF) Online Extension Program, and Technological and Educational Assistance to the Partner Schools. The Outreach Program's activities, including Mobile Relief Distribution, Community Pantry, and Environmental Awareness Advocacy Outreach at UA ECO Farm, have secured full vaccination of all recipients, served as a source of additional resources and promoted mental wellness, commitment, and environmental awareness among the volunteers and recipients.

The University of the Assumption's best practices on community engagement during the pandemic was commendable and had a significant impact on the community. The programs implemented were innovative and effective in addressing the challenges brought by the COVID-19 pandemic in its immediate community, providing relief and support while promoting health consciousness and capacity building. The Outreach Program's multi-sectoral approach, strict compliance with health and safety protocols, and sustained efforts contributed to its success and positive impact on the community.

It is recommended that other Higher Educational Institutions (HEIs) can learn from UA's best practices on community engagement during the pandemic to improve their quality of community engagements and foster a culture of excellence. It is important for sustained efforts and resources to be allocated to achieve program goals and secure sustained support for programs that aim to address community needs.

The COVID-19 pandemic has brought about unprecedented challenges and changes in the world. However, it has also brought

out the best in people, as individuals and communities become more health-conscious and observe protocols for everyone's safety. The University of the Assumption (UA) has demonstrated remarkable efforts and contributions to global healing in the past two years, despite the challenges to sustainability posed by the pandemic.

This study highlights the best practices of UA in community engagement during the pandemic, particularly in helping poor and vulnerable communities. The UA CEO was able to design and facilitate new extension and outreach programs, such as the HEAL program and the *KayadUAngan da ring Kayanakan*, and the technological and educational assistance to partner schools. The involvement of schools and departments with their respective programs and expertise shows the spirit of “malasakit” and “bayanihan” in the implementation of extension and outreach activities.

Moreover, the research suggests other important extension and outreach programs that UA can engage in, such as continuing the formation of Barangay Health Workers, researching the flight of garbage collectors in Pampanga, and creating sustainable projects for UA ECO Farm. The report also recommends assigning lead academic units to create projects aligned with the program, allotting budgets for solidarity and emergency funds, organizing alumni volunteers at the barangay level, and emphasizing the importance of small contributions.

Overall, this study underscores the need for educational institutions to strengthen their curriculum practices and make them more responsive to the learning needs of students, even beyond the conventional classroom. By demonstrating innovative approaches and a commitment to community engagement during the pandemic, UA has shown that even in difficult times, there are opportunities to help and contribute to global concern of healing.

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# Demographic Correlates of Depression Among Community-Dwelling Adults in Pampanga

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**ABSTRACT**

*Depression is a major global mental health concern affecting individuals across community settings, including those without access to formal mental health services. This study examined the association between demographic factors and depression among community-dwelling adults in selected municipalities and cities in Pampanga. A quantitative descriptive cross-sectional design was employed involving 1,169 adults selected through multistage sampling. Data were collected using a demographic questionnaire and the Beck Depression Inventory–II (BDI-II). Descriptive statistics and non-parametric inferential analyses, including Spearman's rank correlation, Mann-Whitney U tests, and Kruskal-Wallis tests, were utilized to examine relationships and group differences in depression scores across demographic variables. Results revealed that the majority of participants reported minimal depressive symptoms (86.0%), while 6.5% experienced mild depression, 4.9% moderate depression, and 2.7% severe depression. Females reported significantly higher depression scores than males, although the effect size was small. Significant but very weak associations were also found between depression scores and age and household size, indicating that younger adults and individuals living in larger households tended to report slightly higher depressive symptoms. No statistically significant differences in depression scores were observed across religion, employment status, educational attainment, income, and family structure. Marital status approached statistical significance, with single individuals reporting higher depression levels than married respondents in post hoc analysis. Overall, the findings suggest that depressive symptoms are present across varying levels within community populations and are modestly associated with selected demographic characteristics. The study provides baseline community-level evidence that may support mental health screening initiatives and preventive interventions targeting vulnerable demographic groups in local settings.*

**Key words:** *community-dwelling adults*, *depressive symptoms*, *demographic correlates*, *mental health screening*, *non-parametric analysis*, *Pampanga*

## INTRODUCTION

Depression is a common mental health condition influenced by a combination of biological, psychological, and social factors. Recent research showed that a person's demographic background—such as age, sex, education, employment status, income, and family situation—can significantly affect their risk of experiencing depression. These characteristics shape the kinds of stress people face, the resources they can access, and the support systems available to them, all of which influence mental health outcomes (Lund et al., 2018; Patel et al., 2018; Steel et al., 2014).

The social determinants of mental health framework explains that conditions like poverty, unemployment, and low educational attainment increase the risk of depression because they create ongoing stress and limit access to support services (Lund et al., 2018). Similarly, the stress process model suggests that people in disadvantaged social positions are more likely to experience depression because they face more life stressors and have fewer coping resources (Steel et al., 2014). These perspectives consistently show that demographic and socioeconomic factors play an important role in mental health.

Global studies confirmed that depression is not limited to clinical settings and is also present in community populations. Younger adults and women are often more vulnerable to depressive symptoms due to life transitions, responsibilities, and social expectations (Steel et al., 2014). In addition, unemployment and lower educational attainment are strongly linked to higher levels of depression because of financial stress and reduced life opportunities (Lund et al., 2018).

Studies across Asia and other regions showed similar patterns, where depression is present in general populations even among individuals who have never sought professional help. Research in Southeast Asia, including the Philippines, showed that many people experience depressive symptoms but do not report them due to cultural beliefs and limited access to mental health services (Maravilla & Tan, 2019; Martinez et al., 2020; Tuliao,

2014). The Philippine Mental Health Act (Republic Act [RA] No. 11036) has strengthened efforts to improve mental health services, especially at the community level, highlighting the need for local data to guide interventions (Lally et al., 2019).

However, there are still limited studies in the Philippines that focus on how demographic factors predict depression in community settings. Most available research is based on clinical or institutional samples, which may not fully represent the general population. This gap highlights the need for community-based studies to better understand who is most at risk and to support more targeted mental health programs.

This study therefore examined whether selected demographic characteristics—such as age, sex, civil status, religion, education, employment status, income, family structure, and household size are associated with depression severity among adults in selected areas in Pampanga.

## METHOD

### Research Design

This study employed a quantitative descriptive cross-sectional research design to describe the demographic characteristics and depression severity among adults in selected municipalities and cities in the province of Pampanga, Philippines. A cross-sectional approach is appropriate for examining variables at a single point in time and is widely used in community-based epidemiological research to establish prevalence estimates and identify population characteristics (Setia, 2016). The design also provides baseline evidence useful for mental health planning and intervention development (Lund et al., 2018; Patel et al., 2018).

### Participants

The study involved 1,169 adult respondents selected through multistage sampling from two cities (San Fernando & Mabalacat) and four municipalities (Arayat, Lubao, Porac & Sta.

Rita) in the province of Pampanga, Philippines. In the first stage of sampling, four (4) barangays from each city and municipality were randomly selected, resulting in a total of 24 participating barangays. A quota of approximately 50 respondents per barangay was set, resulting in an intended sample size of 1,200 respondents. However, incomplete questionnaires were excluded during data screening and cleaning, resulting in a final valid sample of 1,169 respondents. Eligible respondents were adults aged 20 years and above who had resided in the selected communities for at least six months and were able to read and write in Filipino. Individuals with debilitating medical conditions that could interfere with participation, as well as those with incomplete responses, were excluded from the final analysis. The resulting sample retained diverse demographic characteristics, enhancing the representativeness of community-dwelling adults in the selected areas.

**Measures**

Data were collected using a structured questionnaire consisting of two parts: (1) demographic profile and (2) the Beck Depression Inventory–II (BDI-II). The demographic section covered age, sex, civil status, religion, educational attainment, employment status, income, family structure, and household size, based on commonly examined variables in depression research (Lund et al., 2018).

Depression was measured using the Beck Depression Inventory–II (BDI-II), a 21-item self-report scale rated on a four-point Likert scale, with higher scores indicating greater depressive symptoms. Scores were interpreted as follows: 0–13 (minimal), 14–19 (mild), 20–28 (moderate), and 29–63 (severe). The instrument has demonstrated strong reliability in previous studies, with internal consistency ranging from $\alpha = .92$ to .93 in the original version (Toosi et al., 2017; Tuliao, 2014; Wang & Gorenstein, 2015). Permission to adapt and use the BDI-II was obtained from the copyright holder. For use in the present study, the instrument was translated into Filipino and subjected to back-translation to ensure linguistic and conceptual equivalence. A pilot study was conducted involving 400 respondents from eight barangays in Angeles City, Pampanga to

assess clarity, comprehensibility, and cultural appropriateness of the items. Based on the pilot testing, the adapted version demonstrated good internal consistency reliability, with a Cronbach's alpha of .89, supporting its suitability for community-based mental health assessment.

**Procedure**

Prior to data collection, permissions were secured from local government units (LGUs) and barangay officials in the selected areas. Data were gathered in accessible community venues such as barangay halls and multipurpose centers because these locations provided private and secure spaces that protected participant confidentiality while facilitating convenient community-based data collection. Trained research assistants facilitated the administration of questionnaires and ensured that standardized instructions were provided. Respondents were informed of the study's purpose and provided written informed consent prior to participation. Completion of the survey required approximately 20–30 minutes. Completed questionnaires were checked for completeness and encoded for analysis. Community-based administration is recognized for improving response rates and enhancing data quality in epidemiological studies (Setia, 2016). As a token of appreciation for their voluntary participation, respondents were provided with umbrellas and snacks after completing the survey. These were given as non-coercive tokens of appreciation and were not intended to influence participation or responses. Participation remained entirely voluntary, and respondents were informed that they could decline or withdraw at any point without penalty or loss of any benefit.

**Data Analysis**

Data were analyzed using descriptive and inferential statistics. Frequency distributions, percentages, means, standard deviations, and score ranges were computed to summarize the participants' demographic characteristics and depression. The assumption of normality was assessed using Shapiro-Wilk tests and visual inspection of Q-Q plots. Results indicated that

depression scores significantly deviated from normality across all primary demographic categories, including sex (males: $W = 0.72$; females: $W = 0.75$), religion (Catholic: $W = 0.74$; Non-Catholic: $W = 0.76$), and employment status (employed: $W = 0.73$; unemployed: $W = 0.75$), with all $p < .001$. Similar pervasive patterns of non-normality were observed when partitioning the sample by marital status ($W$ range: 0.69–0.80, all $p < .001$), income ($W$ range: 0.57–0.76, all $p < .001$), and family size ($W$ range: 0.65–0.79, all $p < .001$). Regarding educational attainment, eight of the nine subgroups violated the normality assumption ($W$ range: 0.71–0.81, all $p \leq .005$), while only the Below Elementary ($n = 11$) met the criteria for normality ($W = 0.86$, $p = .055$). Continuous variables also exhibited significant deviations, with non-normal distributions found for age ($W = 0.96$, $p < .001$) and household size ($W = 0.90$, $p < .001$). Visual inspection of Q-Q plots consistently revealed a substantial positive skew for depression scores across all subgroups, while age and household size showed more moderate deviations. Given the widespread violation of parametric assumptions and the significant imbalance in group sizes, non-parametric procedures were prioritized for all subsequent inferential analyses to ensure statistical robustness. To evaluate the relationships between variables, Spearman's rank-order correlation was used to examine the association between age, household size, and depression scores, as these variables were treated as continuous variables. For categorical comparisons, non-parametric group difference tests were conducted. Specifically, Mann–Whitney U tests were performed to examine differences in depression scores based on sex, religion, and employment status. Furthermore, Kruskal–Wallis tests were utilized to assess differences in depression scores according to marital status, educational attainment, income, and family structure. All statistical analyses were conducted using Jamovi software, with the level of significance set at $\alpha = .05$ for all inferential tests.

**Ethical Considerations**

Ethical standards were strictly observed throughout the study. Prior to data collection, the research protocol was reviewed and approved by the appropriate Institutional Research Ethics

Board (IREB). Participation was voluntary, and informed consent was obtained from all respondents before their involvement in the study.

Participants were assured of confidentiality and anonymity, and no identifying information was collected. They were also informed of their right to withdraw at any time or to skip any question without penalty. All data were securely stored and reported in aggregate form only. Ethical procedures followed established guidelines for psychological and community-based research to ensure respect for participants' rights, dignity, and well-being.

## RESULTS

**Table 1**

*Depression level across demographics*

| Demographic Variable | *n* | *M* | *SD* | % for Depression Levels | | | |
|---|---|---|---|---|---|---|---|
| | | | | **Minimal** | **Mild** | **Moderate** | **Severe** |
| *Sex* | | | | | | | |
| **Male** | 406 | 5.17 | 7.74 | 30.4 | 1.9 | 1.6 | 0.9 |
| **Female** | 763 | 6.15 | 8.24 | 55.6 | 4.6 | 3.3 | 1.8 |
| *Religion* | | | | | | | |
| **Catholic** | 1,068 | 5.68 | 7.94 | 78.9 | 5.9 | 4.3 | 2.3 |
| **Non-Catholic** | 101 | 7.13 | 9.38 | 7.1 | 0.6 | 0.6 | 0.3 |
| *Employment Status* | | | | | | | |
| **Employed** | 516 | 5.23 | 7.34 | 38.9 | 2.6 | 1.9 | 0.9 |
| **Unemployed** | 652 | 6.26 | 8.61 | 47.1 | 3.9 | 3.0 | 1.8 |
| *Marital Status* | | | | | | | |
| **Single** | 244 | 6.75 | 8.24 | 16.9 | 2.0 | 1.5 | 0.5 |
| **Married** | 840 | 5.47 | 7.87 | 62.9 | 4.0 | 3.3 | 1.7 |
| **Widowed** | 43 | 5.67 | 8.21 | 3.4 | 0.1 | – | 0.2 |
| **Separated** | 41 | 6.88 | 10.5 | 2.8 | 0.3 | 0.1 | 0.3 |
| *Educational Attainment* | | | | | | | |
| **No Formal Education** | 11 | 5.45 | 5.87 | 0.9 | 0.1 | – | – |
| **Elementary Graduate** | 211 | 6.12 | 8.39 | 15.1 | 1.0 | 1.4 | 0.5 |
| **Below Elementary** | 28 | 8.86 | 11.3 | 1.6 | 0.4 | 0.1 | 0.3 |

| Demographic Variable | *n* | *M* | *SD* | % for Depression Levels | | | |
|---|---|---|---|---|---|---|---|
| | | | | **Minimal** | **Mild** | **Moderate** | **Severe** |
| **High School Graduate** | 504 | 5.56 | 8.13 | 37.6 | 2.5 | 1.8 | 1.2 |
| **HS Undergraduate** | 118 | 7.12 | 9.22 | 8.2 | 0.9 | 0.4 | 0.5 |
| **College Graduate** | 107 | 4.87 | 6.28 | 8.2 | 0.4 | 0.5 | – |
| **College** | 95 | 6.00 | 8.27 | 6.8 | 0.8 | 0.3 | 0.2 |
| **Undergraduate** | 84 | 4.77 | 5.72 | 6.6 | 0.3 | 0.3 | – |
| **Vocational** | 11 | 5.27 | 7.09 | 0.9 | – | 0.1 | – |
| **Others** | | | | | | | |
| *Income* | | | | | | | |
| **≤ ₱20,833** | 1,087 | 5.72 | 7.97 | 80.5 | 6.2 | 4.6 | 2.2 |
| **₱20,834 - ₱33,332** | 47 | 7.28 | 9.22 | 3.4 | 0.2 | 0.2 | 0.3 |
| **₱33,333 - ₱66,666** | 17 | 3.47 | 6.09 | 1.4 | – | 0.1 | 0.0 |
| **₱66,667 - ₱166,666** | 10 | 6.40 | 11.5 | 0.8 | – | – | 0.1 |
| **≥ ₱166,667** | 2 | 9.00 | 12.7 | 0.1 | 0.1 | – | – |
| *Family Structure* | | | | | | | |
| **Nuclear** | 663 | 5.21 | 7.29 | 49.9 | 3.4 | 2.6 | 0.9 |
| **Extended** | 163 | 6.19 | 8.40 | 11.6 | 1.3 | 0.6 | 0.5 |
| **Grandparent-Led** | 26 | 8.73 | 13.3 | 1.8 | 0.1 | 0.1 | 0.3 |
| **Single-Parent** | 191 | 6.47 | 8.64 | 13.7 | 1.2 | 0.9 | 0.6 |
| **Blended Family** | 15 | 8.07 | 12.2 | 0.9 | 0.1 | 0.2 | 0.1 |
| **Childless** | 14 | 4.07 | 6.45 | 1.1 | – | 0.1 | – |
| **Multiple Type** | 18 | 11.1 | 11.7 | 1.3 | – | 0.1 | 0.2 |
| **Living Alone** | 78 | 6.21 | 8.04 | 5.7 | 0.4 | 0.4 | 0.2 |
| *Overall* | 1,169 | 5.81 | 8.08 | 86 | 6.5 | 4.9 | 2.7 |

*Note. n* = sample size; *M* = mean; *SD* = standard deviation. Percentages for depression severity levels indicate the proportion of participants within each demographic category. Non-Catholic participants included members of other Christian denominations (e.g., Iglesia Ni Cristo [INC], Methodist, and Protestant). Family structure categories were defined as follows: nuclear = two parents with children; extended = family living with relatives; grandparent-led = grandparents raising grandchildren; single parent = one parent raising child/children; blended = parents with children from previous relationships; childless = couple without children by choice or circumstance; multiple type = combination of family structures; living alone = one-person household.

Table 1 outlines the descriptive statistics for depression levels, including means, standard deviations (SD), and severity classifications across several demographic dimensions, such as

sex, religion, employment status, marital status, educational attainment, income, and family structure.

In terms of sex, females reported a higher mean depression score (*M* = 6.15, *SD* = 8.24) compared to males (*M* = 5.17, *SD* = 7.74). Regarding religious affiliation, Non-Catholics exhibited a higher mean depression level (*M* = 7.13, *SD* = 9.38) than those identifying as Catholic (*M* = 5.68, *SD* = 7.94). For employment status, unemployed individuals showed higher depression scores (*M* = 6.26, *SD* = 8.61) than those who are currently employed (*M* = 5.23, *SD* = 7.34). With regards to marital status, those who are separated (*M* = 6.88, *SD* = 10.5) and single (*M* = 6.75, *SD* = 8.24) reported higher average levels of depression than married (*M* = 5.47, *SD* = 7.87) or widowed (*M* = 5.67, *SD* = 8.21) respondents. Furthermore, respondents with below elementary education level reported the highest mean depression score within the education category (*M* = 8.86, *SD* = 11.3). In terms of income, participants in the ₱20,834 – ₱33,332 range exhibited a higher mean score of 7.28 (SD = 9.22), as well as those in the highest income bracket (≥ ₱166,667), who reported the highest mean depression score (*M* = 9.00, *SD* = 12.7), though it should be noted this group had a very small sample size (*n* = 2). The lowest average depression score was observed in the ₱33,333 – ₱66,666 income category (*M* = 3.47, *SD* = 6.09), suggesting that depression levels do not follow a strictly linear trend across income increments in this sample. Within the family structure category, individuals in multiple type family arrangements reported the highest mean depression score (*M* = 11.1, *SD* = 11.7), followed by grandparent-led families (*M* = 8.73, *SD* = 13.3) and blended families (*M* = 8.07, *SD* = 12.2). Conversely, childless families reported the lowest mean score (*M* = 4.07, *SD* = 6.45).

Regarding the participants' overall scores on the depression scale, the distribution of symptom severity revealed that a substantial majority reported minimal symptoms (n = 1,005, 86%). These findings suggest that most of the participants experienced little to no depressive symptomatology during the data collection period.

However, approximately 14.0% of respondents were classified within the mild to severe ranges of depression, suggesting that a notable proportion of the sample experienced elevated depressive symptoms. Specifically, respondents with mild depressive symptoms represented a meaningful segment of the population, while fewer participants fell within the moderate and severe categories.

Although severe depression was reported by only a small proportion of participants (n = 31, 2.7%), the presence of moderate depressive symptoms among nearly 5.0% of respondents indicates that some individuals may be experiencing difficulties that warrant further attention. These results suggest that while depression levels were generally low across the sample, a subset of participants demonstrated symptom levels that may benefit from early identification and supportive intervention.

Overall, the results indicate that depressive symptoms were present across varying levels of severity within the community, highlighting the importance of routine mental health screening and accessible preventive services.

**Table 2**

*Correlation of Age and Family Size with Depression Scores*

| Variable | $r_s$ | *p-value* |
|---|---|---|
| Age | -.08 | .005 |
| Household Size | .08 | .008 |

Table 2 shows the relationship between depression and age using a Spearman's Correlation. Result indicates a statistically significant, but very weak, negative correlation between age and depression ($r_s$ = -.08, $p$ = .005). This suggests that as participants get older, their depression scores tend to slightly decrease. However, given the very small correlation coefficient, age explains only a negligible amount of the variation in depression scores within this sample.

Furthermore, the relationship between depression and household size was also analyzed. The results indicated a statistically significant, though very weak, positive correlation between the two variables, $r_s(1165) = .077$, $p = .008$. These findings suggest that as family size increases, depression scores tend to increase slightly. However, the negligible effect size indicates that family size accounts for very little of the variance in depression scores within this sample.

| Variable | *n* | *Mdn* | Test Statistic | *df* | *p* | Effect Size |
|---|---|---|---|---|---|---|
| *Sex* | | | | | | |
| **Male** | 406 | 2.00 | *U* = 140,698 | - | .008 | .092[a] |
| **Female** | 763 | 3.00 | | | | |
| *Religion* | | | | | | |
| **Catholic** | 1,068 | 3.00 | *U* = 48,647 | - | .095 | .098[a] |
| **Non-Catholic** | 101 | 4.00 | | | | |
| *Employment Status* | | | | | | |
| **Employed** | 516 | 2.00 | *U* = 160,642 | - | .175 | .045[a] |
| **Unemployed** | 652 | 3.00 | | | | |
| *Marital Status* | | | | | | |
| **Single** | 244 | 4.00 | *H* = 7.68 | 3 | .053 | .007[b] |
| **Married** | 840 | 2.00 | | | | |
| **Widowed** | 43 | 3.00 | | | | |
| **Separated** | 41 | 1.00 | | | | |
| *Educational Attainment* | | | | | | |
| **No Formal Education** | 11 | 4.00 | *H* = 4.27 | 8 | .832 | .003[b] |
| **Elementary Graduate** | 211 | 3.00 | | | | |
| **Below Elementary** | 28 | 2.50 | | | | |
| **High School Graduate** | 504 | 2.00 | | | | |
| **High School** | 118 | 4.00 | | | | |
| **Undergraduate** | 107 | 3.00 | | | | |
| **College Graduate** | 95 | 3.00 | | | | |
| **College** | 84 | 2.50 | | | | |
| **Undergraduate** | 11 | 1.00 | | | | |
| **Vocational** | | | | | | |
| **Others** | | | | | | |
| *Income* | | | | | | |
| **≤ ₱20,833** | 1,087 | 3.00 | *H* = 3.66 | 4 | .456 | .003[b] |
| **₱20,834 - ₱33,332** | 47 | 4.00 | | | | |
| **₱33,333 - ₱66,666** | 17 | 1.00 | | | | |

| Variable | *n* | *Mdn* | Test Statistic | *df* | *p* | Effect Size |
|---|---|---|---|---|---|---|
| **₱66,667 - ₱166,666** | 10 | 2.00 | | | | |
| **≥ ₱166,667** | 2 | 9.00 | | | | |
| *Family Structure* | | | | | | |
| **Nuclear** | 663 | 2.00 | *H* = 13.8 | 7 | .055 | .012[b] |
| **Extended** | 163 | 3.00 | | | | |
| **Grandparent-Led** | 26 | 4.00 | | | | |
| **Single-Parent** | 19 | 3.00 | | | | |
| **Blended Family** | 15 | 2.00 | | | | |
| **Childless** | 14 | 0.50 | | | | |
| **Multiple Type** | 18 | 9.00 | | | | |
| **Living Alone** | 78 | 3.00 | | | | |

*Note. Mdn* = Median; *U* = Mann-Whitney U; *H* = Kruskal-Wallis H.
[a] Rank-biserial correlation ($r_{rb}$)
[b] Eta-squared based on ranks ($\eta^2 H$)

As shown in table 3, a series of Mann-Whitney U tests were performed to examine differences in depression scores based on sex, religious affiliation, and employment status.

Regarding sex, results indicated that females (*n* = 763, *Mdn* = 3.00) reported significantly higher levels of depression than males (*n* = 406, *Mdn* = 2.00), *U* = 140,598, *p* = .008. Although significant, the rank-biserial correlation indicated a small effect size ($r_{rb}$ = .092), suggesting that gender accounts for only a minor portion of the variance in depression.

With regard to religious affiliation, results indicated that there was no statistically significant difference in depression levels between the Catholic group (*n* = 1068, *Mdn* = 3.00) and the non-Catholic group (*n* = 101, *Mdn* = 4.00), *U* = 48,647, *p* = .095. The Rank-biserial correlation indicated a small effect magnitude ($r_{rb}$ = .098$), suggesting a minimal relationship between religious affiliation and depression levels.

In terms of employment status, results showed that there was no statistically significant difference in depression levels between the employed (*n* = 516, *Mdn* = 2.00) and those unemployed (*n* = 652, *Mdn* = 3.00), *U* = 160,642, *p* = .175. The effect size for this comparison was negligible ($r_{rb}$ = .045), indicating

that employment status explains almost none of the variation in depression scores among these participants.

Moreover, Kruskal-Wallis tests were utilized to assess the impact of marital status, education, income, and family structure on depression.

Regarding marital status, the overall model yielded a non-significant result, though it approached the threshold for significance, $H(3) = 7.68$, $p = .053$. Post-hoc analysis using Dwass-Steel-Critchlow-Fligner pairwise comparisons identified a significant difference specifically between single and married ($W = -3.87$, $p = .032$). No other significant differences between marital status groups were found ($p > .05$). However, despite the specific difference between single and married, the overall effect of marital status on depression is very small, explaining less than 1% of the variance.

In terms of educational attainment, results indicated that depression levels did not significantly differ among the educational groups, $H(8) = 4.27$, $p = .832$, with similar median scores observed across categories. The computed effect size ($\eta^2H = .004$) is extremely low, indicating that less than 0.4% of the variance in depression scores can be explained by education.

Furthermore, in terms of income level, results indicated that there was no statistically significant difference in depression levels based on income, $H(4) = 3.66$, $p = .453$. Median scores remained consistent across all groups, and the associated effect size was negligible ($\eta^2H = .003$), suggesting that income level did not meaningfully influence depression within this sample.

Finally, with respect to family structure, the analysis revealed no statistically significant differences in depression levels across the eight identified family structures, $H(7) = 13.8$, $p = .055$. This lack of significance is reinforced by a small effect size ($\eta^2H = .012$), indicating that family structure accounts for a negligible proportion of the variance in depression scores.

## DISCUSSION

The present study examined depression severity and its association with demographic characteristics among community-dwelling adults in selected municipalities and cities in Pampanga, Philippines. Results revealed that the majority of respondents reported minimal depressive symptoms, suggesting generally low levels of depression within the sample. However, approximately 14% of participants experienced mild to severe depressive symptoms, indicating that a notable portion of the community may still require mental health support and early intervention services. These findings support previous literature emphasizing that depressive symptoms are not limited to clinical populations and may also be present among individuals in general community settings (Lally et al., 2019; Maravilla & Tan, 2019).

Results further showed that females reported significantly higher depression scores than males, although the effect size was small. This finding is consistent with previous studies indicating that women are generally more vulnerable to depressive symptoms due to biological, psychological, and sociocultural factors, including caregiving burdens, gender expectations, and emotional stress exposure (Steel et al., 2014). Younger adults were also found to report slightly higher depression scores, as indicated by the weak negative correlation between age and depression. This finding aligns with earlier research suggesting that younger individuals may experience greater emotional distress due to developmental transitions, uncertainty regarding employment and finances, and social pressures (Patel et al., 2018; Steel et al., 2014).

Household size also demonstrated a weak but significant positive relationship with depression, suggesting that individuals living in larger households may experience additional stressors related to caregiving responsibilities, interpersonal conflict, overcrowding, or financial strain. This observation may be interpreted within the social determinants of mental health framework, which proposes that living conditions and social environments contribute substantially to mental health outcomes (Lund et al., 2018). Although family structure did not reach statistical

significance, descriptive findings indicated relatively higher depression scores among individuals in multiple-type, grandparent-led, and blended family arrangements. Similarly, single and separated individuals demonstrated higher depression scores than married respondents, with post hoc analysis revealing a significant difference between single and married participants. These findings support the stress process model, which posits that social roles and family-related stressors may influence emotional well-being and coping capacity (Steel et al., 2014).

In contrast, religion, employment status, educational attainment, and income were not significantly associated with depression scores. These findings differ from several international studies linking lower socioeconomic status, unemployment, and limited education with increased depressive symptoms (Lund et al., 2018; Patel et al., 2018). One possible explanation is that depression within community populations may be shaped by a more complex interaction of cultural, familial, and psychosocial variables that were not fully captured in the present study. Furthermore, the generally small effect sizes observed across analyses suggest that demographic variables explain only a limited proportion of the variance in depressive symptoms.

Overall, the findings highlight the importance of community-based mental health screening and preventive interventions, particularly among younger adults, females, and individuals experiencing more complex family or household conditions. The results further support the implementation of community-level mental health initiatives under the Philippine Mental Health Act (Republic Act No. 11036), which emphasizes accessible and preventive mental health services within local communities (Lally et al., 2019). Strengthening psychosocial programs, family-centered interventions, and community awareness campaigns may contribute to earlier identification and support for individuals experiencing depressive symptoms.

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design limits the ability to establish causal relationships between

demographic variables and depression severity. Second, the study relied on self-report measures, which may be influenced by recall bias, social desirability bias, or underreporting of symptoms due to stigma associated with mental health concerns in Filipino culture (Tuliao, 2014). Third, although the sample size was relatively large, participants were drawn only from selected municipalities and cities in Pampanga, which may limit the generalizability of the findings to other regions in the Philippines. In addition, some demographic subgroups, such as high-income respondents and certain family structure categories, had very small sample sizes that may have affected the stability of statistical comparisons. Finally, the study focused primarily on demographic variables and did not examine other important psychological and contextual predictors such as social support, coping strategies, trauma exposure, physical health conditions, and access to mental health services.

Future studies may benefit from utilizing longitudinal or mixed-method designs to better understand the causal pathways and lived experiences associated with depression in community settings. Researchers are also encouraged to include broader psychosocial, cultural, and environmental variables to provide a more comprehensive understanding of depression among Filipino adults. Expanding research across different provinces and regions may further strengthen the generalizability of findings within the Philippine context. Additionally, qualitative investigations exploring family relationships, economic stress, stigma, and coping experiences may provide deeper insight into the sociocultural factors influencing depression among community-dwelling Filipinos.

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# The library that cares: How librarians provide mental health support to students and teachers in Pampanga

*Roilingel P. Calilung*

**ABSTRACT**

*This exploratory study examined how academic libraries in Pampanga supported student mental health and well-being before and during the COVID-19 pandemic. Using an exploratory descriptive design, data were collected through a 20-item survey distributed to library leadership (N=6) across CHED-recognized higher education institutions. Results indicated that libraries provided support primarily through collection- and space-based services before the pandemic and shifted to digitally mediated services during the pandemic, including webinars, online access to resources, and social media communication. Findings reveal that while initiatives were strongly leadership-driven and effectively addressed academic resilience, a "specialization gap" exists in dedicated wellness personnel, and evaluation remains largely informal. The study proposes the C.A.R.E. Framework (Coordinated Leadership, Adaptive Environments, Resilient Collections, and Evidence-Based Impact) to help local libraries align their services with institutional wellness strategies and move toward sustainable, evidence-based psychosocial support.*

**Key words:** *Academic libraries, Student mental health, Well-being support, COVID-19, Exploratory study, Pampanga*

## INTRODUCTION

The library has long been understood as a service-oriented institution, but its modern role is far more complex than simple resource provision. It acts as a vital support system for the diverse needs of the academic community—students, faculty, and staff alike—directly influencing their personal and professional growth. In recent years, however, a shift has occurred: mental health and well-being have moved from the periphery to become central

concerns within higher education. This isn't just a matter of student comfort; research suggests that poor well-being is a primary driver behind rising dropout rates. Because a healthy mental state provides the essential foundation for the rigors of learning, a student's academic persistence and overall success are deeply tied to their emotional resilience (Houghton & Anderson, 2017). Consequently, addressing these concerns is no longer just a welfare task—it is an institutional priority.

Academic libraries find themselves in a unique position to promote this well-being, functioning as an integral part of broader institutional support networks. Beyond just offering "help," libraries provide safe, inclusive environments and curated information resources that empower individuals to build self-efficacy (IFLA, 2018). This isn't just a local observation; globally, the conversation around the library's role in mental health has intensified. Cox (2020) pointed to this as a defining trend for the current decade, noting that libraries are increasingly responding to the "hidden" pressures students face, such as sleep deprivation, food insecurity, and escalating anxiety. Essentially, the library's responsibilities are expanding far beyond the traditional boundaries of academic support.

The COVID-19 pandemic served as a major catalyst for this evolution, forcing libraries to rethink their service models almost overnight. As the psychological weight of the pandemic grew, libraries stepped in to provide critical coping resources (IMLS, 2020). We saw this play out through various innovative initiatives worldwide. In Milwaukee, for instance, the Reserve and Renew magazine used creative arts to fund mental health programs, while the Hartford Library in Connecticut launched ARTLink workshops to foster awareness through pottery and podcasting (IMLS, 2020). These examples demonstrate that even in a crisis, the library can serve as a space for creative and emotional recovery.

This movement toward a well-being-centered model isn't isolated to any one region; it is a global trajectory where libraries are becoming recognized as essential to institutional health (Elia, 2019). The 2020 Top Trends in Academic Libraries report

confirmed that student well-being is now a primary driver of how libraries evolve (Benedetti et al., 2020). By embracing the IFLA (2018) vision of the library as both a "sanctuary" and a "therapeutic landscape," institutions are beginning to move past traditional service roles to foster deeper emotional resilience (Brewster, 2014; Cox & Brewster, 2020).

However, a significant gap remains. While these international frameworks offer a compelling blueprint, we still know very little about how they are actually applied within the Philippine higher education system—and specifically within the unique landscape of Pampanga. There is a clear need for a holistic model that doesn't just offer resources, but integrates space and collaboration into a unified support strategy (Cox, 2020). Despite a growing body of international literature, empirical work on how local libraries operationalize these roles is still quite sparse. This study was born from that necessity. By documenting current practices in Pampanga and identifying where we can improve, this research hopes to provide a truly contextualized understanding of how Philippine academic libraries can meet the evolving needs of their students.

***Theoretical Framework***

This study is anchored on Cox & Brewster's (2020) holistic model of library support for mental health and well-being, which features eight distinct aspects of library support.

*The Pyramid of Commitment*

The model is structured as a pyramid where the positioning reflects the strength of commitment required by the institution:

- The Base (Strongest Commitment): The "Review of All Services" represents the most comprehensive level of commitment, requiring an institutional audit of how every library function impacts wellness.

- The Apex (Weakest Commitment): "Signposting" is at the top, representing the most basic level of support—directing users toward external professional help.

- Intermediate Levels: These include providing therapeutic spaces, curating wellness collections, and hosting specific well-being programs.

*Contextual Elements*

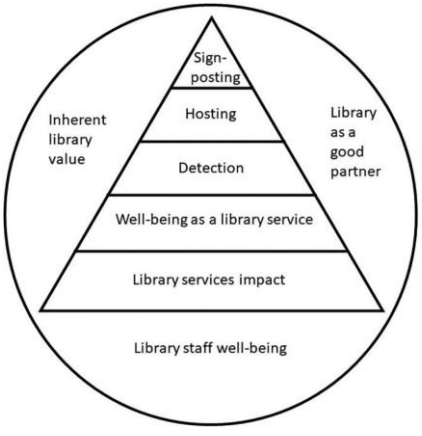
- Inherent Library Value: Represented in the outer circle, this suggests that all aspects of the library—from its quiet atmosphere to its organized information—naturally contribute to student well-being.

- Library as a Good Partner: Positioned outside the pyramid, this emphasizes that the library does not act in isolation but supports university-wide counseling and wellness departments.

- Staff Well-being: This serves as the background to all other aspects. The model argues that librarians with high well-being are better equipped to support the well-being of their students and faculty.

**Figure 1**

*Theoretical Framework of the Study (Adapted from Cox & Brewster, 2020)*



The study aims to describe how academic libraries in Pampanga are providing mental health support to students and teachers with the view of designing a library program framework to support mental health and well-being.

Specifically, it answers the following questions:

1. How may the profile of participants be described in terms of their professional role and responsibility in the academic library?
2. What types of activities are provided by academic librarians in addressing concerns about student mental health and well-being before and during the COVID-19 pandemic?
3. How do academic librarians evaluate the success of these types of activities?
4. What library program framework may be proposed to support student mental health and well-being?

## METHOD

### Research Design

This study employed an exploratory descriptive research design. This approach was selected to identify emerging patterns and institutional adaptations during the COVID-19 crisis within a specialized regional cluster.

### Participants

The participants consisted of library leadership (N=6) from CHED-recognized higher education institutions in Pampanga. Purposive sampling was used to target those responsible for strategic planning and program implementation.

### Instrumentation

Data were collected via a 20-item survey adapted from the Cox and Brewster (2020) model, modified for the Philippine

academic context. Participation was voluntary, following strict ethical guidelines for institutional research.

**Data Collection**

Permission to conduct the study was formally requested from the heads of the identified HEIs in Pampanga, identified through the official CHED Region III registry. Upon receiving institutional approval, the survey was distributed electronically to eligible participants.

To ensure ethical standards, participation was entirely voluntary. All respondents were fully briefed on the study's purpose, the measures taken to ensure data confidentiality, and their right to withdraw from the study at any time without penalty.

**Data Analysis**

The collected data were processed using descriptive statistics, including frequency counts and percentages. These tools were utilized to summarize trends in library practices, categorize the types of mental health initiatives implemented, and map the methods used for service evaluation.

By analyzing these patterns, the study seeks to characterize the role of academic libraries as psychosocial support units and determine how these practices align with broader institutional strategies. The analysis focuses on providing an exploratory account of how Pampanga's academic libraries adapted their services, highlighting both the successes of their interventions and potential areas for future professional development.

## RESULTS

**Table 1**
*Professional Role of Respondents*

| Position of Respondent | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Library Director | 5 | 83.3 |

| Position of Respondent | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Staff with Special Responsibility for Student Well-being | 1 | 16.7 |
| Total | 6 | 100.0 |

The respondents in this study were predominantly library directors, with a smaller number of participants holding responsibilities specifically related to student well-being. This indicates that leadership figures primarily guided the planning and implementation of mental health initiatives within libraries.

The concentration of directors as respondents suggests that mental health and well-being activities were largely embedded in general library management rather than coordinated by dedicated wellness officers. While this demonstrates strong leadership commitment, it may also indicate limitations in specialization, potentially affecting the scope and focus of programs designed to address student mental health.

Indeed, the profile highlights that experience and decision-making authority were central to the development of mental health support initiatives, reflecting libraries' reliance on senior staff to drive both traditional and pandemic-related services.

**Table 2**
*Provision of Mental Health and Well-being Support during the Pandemic*

| Response | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Yes | 5 | 83.3 |
| No | 1 | 16.7 |
| Total | 6 | 100.0 |

During the COVID-19 pandemic, all libraries reported providing support for student mental health and well-being, albeit in different forms. Common approaches included digital communication, webinars, online access to resources, and

reassurance messages via social media, reflecting an adaptation to remote learning and social distancing requirements.

The frequency of these activities suggests that libraries responded directly to the challenges posed by the pandemic, particularly students' concerns about access to learning materials and social isolation. Libraries shifted from primarily space-based support to digital delivery mechanisms, showing adaptability and responsiveness to emerging student needs.

This indicates that academic libraries assumed a dual role during the pandemic, maintaining academic continuity while also addressing psychosocial needs, reinforcing their position as critical support units within higher education institutions.

**Table 3**
*Mental Health and Well-being Activities Implemented During COVID-19*

| Activity | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Recommending leisure reading collections | 5 | 83.3 |
| Reassuring messages via social media | 5 | 83.3 |
| Webinars on accessing resources remotely | 4 | 66.7 |
| Website reorganization for digital support | 4 | 66.7 |
| Listing well-being–related digital resources | 4 | 66.7 |
| Recommending self-help books | 4 | 66.7 |
| Providing additional online learning materials | 4 | 66.7 |
| Suspension of library fines | 4 | 66.7 |
| Creative or craft-based activities | 1 | 16.7 |

Libraries implemented a variety of initiatives during the pandemic. The most common activities included webinars on study-

related topics, recommendations for leisure reading, access to self-help books, and digital skill-building sessions. Some libraries also offered specially designated well-being spaces and content streaming recommendations.

The diversity of activities demonstrates libraries' attempt to address both academic and emotional aspects of student well-being. The focus on digital and remote engagement shows an intentional effort to maintain accessibility despite physical restrictions, responding to concerns about isolation, stress, and continuity of learning.

These initiatives reflect an emphasis on academic resilience, while also highlighting areas for future growth, such as targeted interventions for social and emotional support beyond study-related concerns.

**Table 4**
*Mental Health and Well-being Activities before the Pandemic*

| Pre-pandemic Activity | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Leisure reading collections | 6 | 100.0 |
| Self-help book recommendations | 4 | 66.7 |
| Designated well-being spaces | 4 | 66.7 |
| Information provision on mental health | 2 | 33.3 |
| Creative or craft activities | 1 | 16.7 |

Before the pandemic, mental health support in libraries was primarily space- and collection-based, such as leisure reading collections, self-help materials, and designated quiet or well-being areas. These initiatives were mostly passive, relying on students' voluntary engagement with resources.

While these programs provided foundational support for students' mental health, they were largely oriented toward academic-related stressors rather than holistic emotional or social

well-being. This limited scope reflects traditional library functions in collection development and safe space provision.

Overall, pre-pandemic initiatives set a baseline for library support, which was expanded and adapted during the COVID-19 crisis to incorporate digital and interactive interventions.

**Table 5**
*Student Mental Health Concerns Addressed by Libraries during the Pandemic*

| Student Concern | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Study and access to learning resources | 6 | 100.0 |
| Loneliness and social isolation | 3 | 50.0 |
| Health concerns related to COVID-19 | 3 | 50.0 |
| Misinformation and fake news | 3 | 50.0 |
| Digital well-being issues | 2 | 33.3 |
| Boredom | 1 | 16.7 |
| Sense of community and belonging | 1 | 16.7 |
| Prejudice toward specific student groups | 1 | 16.7 |
| Anxiety about easing restrictions | 1 | 16.7 |

Libraries primarily addressed concerns related to study and access to learning resources, with less frequent attention to issues such as loneliness, health anxieties, digital fatigue, and misinformation. This pattern indicates that libraries framed mental health support through an academic resilience lens.

Although students experienced a variety of psychosocial stressors during the pandemic, libraries' focus on academic-related challenges suggests a practical alignment with their traditional roles. Initiatives aimed at combating misinformation and promoting digital well-being highlight attempts to support cognitive and emotional navigation of crisis contexts.

The findings suggest opportunities to broaden support to address emotional, social, and community well-being more explicitly, complementing the academic focus of existing interventions.

**Table 6**
*Evaluation Methods Used During the Pandemic*

| Evaluation Method | Frequency *(f)* | Percentage *(%)* |
|---|---|---|
| Thank-you messages from students/staff | 4 | 66.7 |
| Resource access statistics | 4 | 66.7 |
| Library staff observations and reflections | 4 | 66.7 |
| Attendance in webinars/activities | 3 | 50.0 |
| Number of messages distributed | 2 | 33.3 |
| No formal evaluation conducted | 2 | 33.3 |

The evaluation of mental health and well-being activities during the pandemic was largely informal. Libraries relied on attendance counts, usage statistics, thank-you messages, and staff observations to monitor participation and engagement. Only a few institutions conducted structured surveys or questionnaires.

These informal methods provided general feedback but offered limited insight into the actual impact on student mental health outcomes. The lack of standardized evaluation frameworks highlights challenges in assessing psychosocial outcomes and refining services based on evidence.

Consequently, while libraries successfully implemented support programs, there is a clear need to develop systematic evaluation mechanisms that can measure effectiveness and guide continuous improvement.

**Table 8**
*Institutional and Strategic Drivers Informing Mental Health Support*

| Driver | *f* | % |
|---|---|---|
| Responding to student demand and concerns | 6 | 100.0 |
| Alignment with university strategy | 5 | 83.3 |
| Benchmarking with other libraries | 4 | 66.7 |
| Library-led initiative | 4 | 66.7 |
| Formal coordination with administration | 3 | 50.0 |
| Research-informed practice | 1 | 16.7 |

Libraries reported that their initiatives were guided by a combination of institutional strategy, student demand, and observation of best practices from other libraries. Some programs were formally coordinated with university policies, while others were developed proactively in response to emerging student needs.

This mix of strategic alignment and responsive innovation suggests that library-led mental health support balances institutional priorities with practical responsiveness. Coordination with university strategies enhances program legitimacy and sustainability, while responsiveness ensures relevance to immediate student concerns.

Overall, institutional drivers play a key role in shaping both the focus and delivery of mental health initiatives, highlighting the need for alignment between library services and broader university well-being objectives.

## DISCUSSION

This study examined the evolving role of academic libraries in Pampanga as both academic and psychosocial support units during a period of unprecedented institutional disruption. By analyzing the shift from pre-pandemic space-based services to the digitally mediated interventions necessitated by COVID-19, the findings reveal a resilient, albeit largely reactive, support system. While the results highlight a strong leadership commitment and a successful pivot to remote engagement, they also uncover

significant gaps in specialized staffing and formal evaluation mechanisms. The following discussion explores these patterns in depth, focusing on the implications of leadership-driven support, the transition of the library as a "safe space," and the necessity of moving toward a more holistic and evidence-based well-being framework.

**Leadership-Driven Initiatives and the Question of Specialization**

The profile of the respondents reveals that mental health initiatives in Pampanga's academic libraries are primarily a "top-down" phenomenon, driven by library directors rather than specialized wellness staff. This leadership-driven commitment is commendable and aligns with Cox (2020), who noted that such support is often embedded within broader administrative roles. However, the data suggests a potential "specialization gap." While directors provide the strategic will, the lack of dedicated wellness personnel may limit the depth of psychosocial interventions. For these programs to be sustainable, there is a clear need to move from ad hoc leadership initiatives to formalized roles or committees that can focus on long-term well-being strategies.

**The Shift from Physical Sanctuary to Digital Support**

A significant finding of this study is the evolution of the library's role as a "safe space." Before the pandemic, support was rooted in the physical—leisure collections and quiet zones—consistent with IFLA's (2018) vision of the library as a sanctuary. The COVID-19 crisis forced a rapid pivot to "digital mediation." The findings show that libraries successfully translated their supportive role into the virtual realm through reorganized websites and reassuring social media presence. This adaptability demonstrates that the "Library That Cares" is not defined by its four walls but by its ability to maintain a presence in the student's digital life, particularly during times of social isolation.

**Academic Resilience vs. Holistic Well-being**

The results indicate a strong "academic lens" in mental health support, with a heavy focus on study-related stress and access to resources. This aligns with the findings of Houghton & Anderson (2017), suggesting that librarians feel most comfortable addressing mental health when it intersects with academic success.

*Critical Observation*: While libraries excelled at mitigating "academic anxiety," there was less consistency in addressing deeper psychosocial issues like loneliness, health anxieties, or the "infodemic" (misinformation). This suggests that while Pampanga's libraries are excellent partners in academic resilience, there is an untapped opportunity to expand into affective and social support. By addressing issues like digital fatigue and post-lockdown transition, libraries can move toward the holistic model proposed by Cox and Brewster (2020).

**The "Evaluation Gap" and the Need for Evidence**

A critical challenge identified in this study is the reliance on informal and anecdotal evaluation methods. Attendance counts and "thank-you" messages provide a pulse on student engagement but do not measure psychosocial impact. This "evaluation gap" is a common hurdle in the literature (Cox & Brewster, 2020). Without standardized metrics or formal feedback loops, it becomes difficult for library directors to argue for increased funding or institutional resources. The findings suggest that for well-being programs to be taken seriously at the university strategy level, libraries must adopt more rigorous, evidence-based assessment tools that go beyond mere usage statistics.

**Toward a Sustainable Library Program Framework**

Ultimately, the responses of academic libraries in Pampanga during the pandemic were characterized by responsiveness but also by fragmentation. The efforts were often reactive to the crisis rather than part of a pre-existing, integrated

well-being framework. To move forward, these libraries must transition from "crisis mode" to a "systemic mode." This involves:

- Integrating well-being into the library's core strategic plan.
- Upskilling staff to handle basic mental health signposting.
- Collaborating more formally with university health and counseling offices to ensure the library is a recognized node in the institution's broader support network.

**The "CARE" Framework for Academic Library Well-being**

This framework is designed to transition academic libraries from reactive crisis management to proactive institutional support. It follows the acronym C.A.R.E. to ensure it is memorable and aligned with the "Library That Cares" theme.

**Figure 2**
*Proposed Library Program Framework*

| Pillar | Focus Area | Actionable Components |
|---|---|---|
| Coordinated Leadership | Governance & Strategy | • Institutionalize well-being in the Library Strategic Plan.<br>• Appoint a "Well-being Liaison" (The Specialization Gap).<br>• Formalize partnerships with University Counseling Services. |
| Adaptive Environments | Physical & Digital Spaces | • Curate "Sanctuary Spaces" (Quiet/Sensory zones).<br>• Optimize the Library Website for "Digital Wellness" resources.<br>• Maintain a supportive social media presence (Reassurance messaging). |

| Pillar | Focus Area | Actionable Components |
|---|---|---|
| Resilient Collections | Information & Literacy | • Expand "Bibliotherapy" (Leisure reading & Self-help).<br>• Integrate "Digital Well-being" into Information Literacy instruction.<br>• Curate "Stress-Buster" kits during exam weeks. |
| Evidence-Based Impact | Evaluation & Growth | • Adopt standardized "Affective Outcome" surveys.<br>• Track qualitative "Impact Stories" alongside usage stats.<br>• Conduct annual "Well-being Audits" of library services. |

## Conclusion

This study has illuminated the vital, albeit evolving, role of academic libraries in Pampanga as essential support units for student and faculty well-being. The findings demonstrate that while libraries successfully pivoted from passive, space-based services to a dynamic, digitally-mediated model during the COVID-19 pandemic, these initiatives were primarily reactive. The study confirms that libraries effectively utilize their traditional strengths—collection development and quiet space provision—to foster academic resilience. However, the reliance on library leadership to drive these initiatives, coupled with the absence of formal evaluation mechanisms, suggests that mental health support remains an "add-on" function rather than an integrated component of institutional strategy.

The study concludes that while Pampanga’s academic libraries are already "libraries that care," they currently operate in a fragmented capacity. To transition from being reactive providers of

ad-hoc support to becoming proactive, holistic centers for student well-being, libraries must formalize their mental health initiatives, bridge the gap between academic and psychosocial support, and adopt rigorous, evidence-based assessment frameworks.

**Recommendations**

Based on the findings and the limitations identified, the following recommendations are proposed:

**Formalize the Institutionalization of Well-being Programs**. Library directors should move beyond ad-hoc or crisis-driven responses by embedding mental health and well-being support into the library's formal strategic plan. This includes defining clear objectives, roles, and responsibilities for staff, ensuring that support is not solely dependent on individual leadership initiative but is sustained by institutional policy.

**Develop a "Well-being Liaison" Role**. To address the specialization gap, libraries should designate or train "Well-being Liaisons" among existing staff. These individuals would be responsible for staying updated on mental health trends, coordinating with the university's Guidance and Counseling offices, and acting as the primary point of contact for students seeking support or signposting to professional services.

**Implement Systematic Evaluation Frameworks**. Moving beyond anecdotal feedback, libraries must adopt systematic assessment tools. It is recommended that libraries utilize pre- and post-activity surveys, impact-based questionnaires, and standardized mental health literacy metrics to measure the efficacy of their programs. This data-driven approach is essential for demonstrating the library's value in the broader campus ecosystem and justifying resource allocation.

**Expand Support to Affective and Social Domains**. Libraries should broaden their service scope to address non-academic stressors. Future initiatives should include programs that specifically target loneliness, social isolation, and digital well-being. Collaborations with local artists, student organizations, and health professionals could facilitate creative and community-building activities that promote emotional well-being beyond traditional study-related stress relief.

**Conduct Longitudinal and Qualitative Research**. Since this study was exploratory and quantitative, future research should employ qualitative methods—such as interviews or focus group discussions—with both students and librarians. This would provide deeper insights into the lived experiences of students using these services and help identify the specific cultural and institutional barriers to effective mental health support in the Philippine higher education context.

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