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RESEARCH ARTICLE

Relevance of Preventive Measures against COVID-19 and Other Communicable Diseases for University Employees and Students Returning to Face-to-Face Teaching

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ABSTRACT
This study links health protocol awareness and appreciation to communicable disease prevention in higher education institution in Santiago City, Isabela, Philippines. If employees and students understand the health regulations and a majority of respondents approve and are more likely to follow, COVID-19 and other infectious diseases can be prevented. This descriptive-correlational cross-sectional study had 368 participants. The researchers prepared a more extensive questionnaire to analyze employees and students returning to face-to-face schooling in 2021-2022's trust and reliance in Covid-19 and other communicable disease prevention. Five of the higher education institution's ten leading causes of morbidity are also identified and ranked in the province. Acute respiratory, urinary, lower respiratory, and skin infections are contagious. Hypertension ranks fifth. The higher education institution's employee and student population has reached the desired herd immunity level, which is much higher than the Regional level; Group I's health problems have been alleviated by the anti-Covid preventive measles vaccination; and all five diseases are preventable, making them good targets for preventive medicine. The findings showed that "There is no significant difference between health data obtained from a general population of a region of the country and that of a school population in terms of the leading causes of morbidity and the current Covid-19 vaccination rate of the vulnerable population" and that "There is no significant difference between the level of appreciation of the relevance of health protocols between a segment of the population in a higher education institution grouped as those with health."

Keywords: Preventive Measures, Covid-19, Communicable diseases, face-to-face, students, employees

Introduction

Now more than ever in University of La Salette (ULS) history, everyone is worried about a well-maintained, optimal school health system with strict health protocols. Everyone in the school knows that any communicable disease, especially COVID-19, poses a double threat. For one, Covid-19 has spread in pandemic proportions, resulting in either a difficult clinical course with hospitalization for survivors or a macabre death with no burial privileges for vulnerable populations, especially those with co-morbidities. Second, in addition to the traumatic health experience, treatment modalities are such that afflicted patients will surely be drained of their financial resources for hospitalization and medication expenses, and may even lose their source of income (employee salaries, failure to conduct business or practice of profession) due to mandatory quarantine periods that take weeks or months to complete.

Before the 2019 corona virus pandemic, the WHO created Universal Health Care. Preventive medicine was used to address the global illness pandemic. All government health agencies prioritize basic care since prevention is better than cure. The efficacy of vaccination and community organization in primary care that educates vulnerable patients to prevent chronic disease, injury, or infection by managing risk factors has been emphasized. Thus, when COVID-19 occurred, secondary care (disease treatment) had to heavily rely on primary care approaches to prevent the population's practically uncontrollable morbidity and mortality rates.

Wearing face masks and face shields, frequent hand-washing and disinfectant use, social distancing, avoidance of crowded areas, self-quarantine as soon as symptoms appear, and meticulous contact-tracing of would-be carriers have become the norms for fighting the pandemic. The ultimate goal is herd immunity from the virus, which is achieved by mass vaccination. Given the current state of community lockdowns, followed by the lifting of restrictions depending on the surge of diagnosed Covid cases, it is unclear how university employees and students will adapt to the changing conditions in our country and city. Health protocols would not be resisted if people solely worried about health and ignored economic motives. Authorities must address non-compliance and, to a lesser extent, disregarding health rules because the other half of the problem has a wider variety of negative impacts on individuals and families.

For employees, 1) untruthful reporting of their health, thinking that symptoms are mild and that further absences will cut on their paid number of leave of absence, 2) hasty and even missed filling-up of protocol questionnaires at the gate because it has become repetitive and considered a waste of time, and 3) willful delaying and eventually missing scheduled anti-Covid vaccination in their re-entry. The following delinquencies have been noticed for the few students who visit school to settle accounts and those who chose partial face-to-face education in December 2021: 1) irresponsible late submission of mandatory laboratory exam results on the day of their rotation, leaving little time for proper health screening, 2) unconscious disobedience of properly marked right of way around campus, and 3) admission to remaining unvaccinated primarily on the insistence of parents due to personal beliefs.
Given the attitude of a portion of the school's population toward the present health protocols, it may benefit to conduct studies on all stakeholders' views of these preventive medicine instruments. It would assist if a majority, if not all, consider preventive measures useful and practical in fighting the pandemic and other infectious diseases. However, understanding why some stakeholders risk bypassing or even ignoring protocols would be helpful. But what could be most helpful is making all questionnaire respondents better informed of these preventive measures and their benefits if observed by the majority, and then motivating them to help authorities reach out to the greater population. Better promotion of primary health care and credible scientific evidence from accurate, updated, and consistent profiling of individual health records would progress health disciplines.

In October 2021, the university's first employee died from the COVID-19 epidemic during School Year 2021–2022. The deceased had no anti-Covid immunization and had uncontrolled co-morbidities at the time of infection, according to a recent university clinic check-up.

This study seeks to link higher health protocol awareness and appreciation to ULS's successful communicable disease prevention. It will initially only be known to respondents, with the goal of raising awareness among them and the public of the proven benefits of taking preventive measures seriously to fight COVID-19 and other communicable diseases. Since ULS is a university, personnel and students should understand health protocols thoroughly. The importance of their strict implementation may be overlooked. If a majority

of responders approve of the protocols and commit to being as compliant as possible, the preventative measures will have a better chance of stopping COVID-19 and other infectious diseases.

Statement of the Problem

The study's dilemma is that the university's return to face-to-face teaching after decreasing quarantine rules requires a paradigm shift in staff and student attitudes toward preventative health measures. There had been no published research, so far, that has addressed the following questions:

1. What public health conditions and demographic distribution are seen and diagnosed among University of La Salette personnel and students?
2. How do statistics data compare to regional and provincial morbidity and anti-Covid vaccination rates?
3. Do most vulnerable people comply with health protocols, even when some are difficult to implement?

Null Hypotheses

These null hypotheses will lead our study at 0.05 level of significance:

1. There is no difference between health data obtained from a general population of a region with that of a school population in terms of leading causes of morbidity and current Covid-19 vaccination rate of the vulnerable population.

2. There is no difference between the level of appreciation of the relevance of health protocols between a segment of the population in ULS grouped as those having health issues during the duration of the research, and those without health issues in their enjoyment of health practices.

Background

The COVID-19 virus is a social and global health concern. Public health programs at the local, state, territorial, national, and tribal levels in the United States protect the population, particularly those who are at risk for serious illness or death. There was a significant increase in the number of confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections among younger people across all US areas during the summer, with the highest incidence among 20-29-year-olds from June to August and the largest regional increases in June 2020 in the southern US.[1,2] These institutions, their students and staff, as well as their families and communities, receive guidance from the CDC that is based on statistics.[1,3] The prevention, mitigation, and testing procedures for COVID-19 were implemented at educational institutions before the fall of 2020. A limited number of college studies have revealed the impacts of numerous distinct programs. On September 9, 2020, 4% of educational institutions in the United States will be entirely face-to-face, 23% will be largely face-to-face, and the remaining institutions will either employ hybrid models or instruct online. [1,4] A large institution in North Carolina, USA, was the location of a recent outbreak of laboratory-confirmed SARS-CoV-2 illnesses, which was described in a report that was published not too long ago. Their experience demonstrates the potential for a quick spread across campus. This university took several preventative steps before the start of the fall semester, including increasing the physical spacing in classrooms, requiring students to wear face masks in the classroom and other indoor common areas, and modifying the dining options to accommodate fewer people to lessen the likelihood of overcrowding. These measures were taken to prepare for the arrival of students. In addition, the institution devised a strategy for the isolation of contagious individuals and the quarantine of those who had intimate contact with them. The university did not establish any kind of universal entry or any kind of screening tests regularly. Students moved into on-campus housing from August 3 through August 9, however on August 19, due to an epidemic of SARS-CoV-2 illnesses, all classes were switched to an online format, and the university began reducing housing density in on-campus facilities. During this time, students moved into on-campus housing. As of the 25th of August, a total of 670 SARS-CoV-2 illnesses that were confirmed in the laboratory had been discovered among the students, faculty, and staff of the university.[1]

They arrived at the following conclusion in a paper that they published: the tiered mitigation method adopted on UC campuses, informed by public health science and potentially boosted by a more compliant population, minimized campus transmission and outbreaks, and limited transmission to outlying communities. This finding was supported by public health science. University policies that include these mitigating steps in Fall

2020 along with the SARS-CoV-2 vaccination may assuage some local worries about college students returning to communities and may also facilitate the resumption of normal campus operations and in-person education.[5]

Because there is currently no recognized treatment for COVID-19, preventing its spread throughout the population is of the utmost importance. Hygiene of the hands, social distancing, and isolation from others are the three most important aspects of keeping the disease from spreading across society. An increase in the capacity of testing will allow for the detection of more positive patients in the community, which will allow for the reduction of secondary cases through the implementation of stronger quarantine regulations.[6]

The COVID-19 pandemic will affect millions of college students and staff members across the United States. On college campuses, various COVID-19 mitigation methods were analyzed for their potential therapeutic and economic value. The dynamic microsimulation that is part of the Clinical and Economic Analysis of COVID-19 treatments (CEACOV) follows both student and faculty illnesses as well as community transmissions. Outcomes include infections, dollars saved per infection averted, and quality-adjusted life years (QALYs). Masks, ESD, and RLT were utilized in this process. The results are reported per one semester (105 days) and 5,000 students (1,000 teachers). Among asymptomatic students and staff, the number of COVID-19 cases decreased from 3,746 (164) with no mitigation to 493 (28) with ESD and masks and 151 (25) with RLTq3. In comparison to just using masks, the cost of using ESD was $168/infection-prevented (or $49,000/QALY). RLTq3 added $8,300 for each infection avoided ($2,804,600 per QALY) for $10 per test. RLTq3 had a cost savings of $275 per infection avoided, or $52,200 per QALY, at $1 per test. Maskless procedures were inefficient. It is possible to avoid 87 percent of COVID-19 cases on college campuses by the use of cost-effective social isolation and masks. Laboratory testing on a routine basis has the potential to prevent 96% of infections[7], but it must be cost-effective.

Schools should either fully close, partially close, or reopen based on risk to maximize the educational, well-being, and health benefits for children, teachers, staff, and the community while also preventing a new COVID-19 outbreak. To decide whether or not to reopen or close schools, numerous aspects need to be evaluated: Local COVID-19 epidemiology: There may be regional variations in this. They need to investigate the benefits as well as the risks: how do open schools influence the personnel as well as the students? The following factors should be taken into account: the intensity of school transmission: no cases, sporadic transmission, clusters, or community transmission; the impact of school closures on education, health, and underprivileged groups such as girls, displaced people, and disabled people; the effectiveness of remote learning; the ability of local health officials to move quickly; school safety; cooperation of local public health authorities with school work; and, other public health initiatives beyond school.[8]

Exposure risk determines SARS-CoV-2 protection for workers. The danger depends on the nature of employment, the opportunity for prolonged human interaction, and workplace contamination. Infection prevention and control techniques should be based on a complete workplace hazard assessment and use engineering and administrative controls, safe work practices, and PPE to prevent worker exposures. SARS-CoV-2 OSHA guidelines mandate employers to train workers on infection prevention and control, including PPE. Employers should stay updated about outbreak conditions, including community spread and testing availability, and execute infection preventive and control measures accordingly. The CDC has issued interim COVID-19 recommendations for businesses and employers. The interim guidance aims to reduce occupational COVID-19 exposure. The guidance also addresses employer considerations as SARS-CoV-2 community transmission evolves. The advice is for non-medical settings. The Equal Employment Opportunity Commission (EEOC) and other federal authorities may provide additional guidelines to employees and businesses.[9]

After recovering from COVID-19 or having been exposed to it, the Centers for Disease Control and Prevention (CDC) has published guidelines for returning to work in some fields, such as healthcare and essential infrastructure. It is possible for workers in industries other than healthcare to utilize home isolation regulations in order to return to work.[9]

It is imperative that prior to the start of the school year, all concerns relating to infectious diseases be addressed. In terms of risk-prevention, it is important to conduct an analysis of the disease transmission rate at the community level; in areas where widespread local transmission of Covid-19 is taking place, schools are required to remain

closed (i.e. the risk is greater than the potential benefits). As for regions that do not have or have very little disease transmission, as determined by the relevant health authorities such as the Inter-Agency Task Force on Emerging Infectious Diseases (IATF-EID) or the local Epidemiology Bureau, gradual resumption of face-to-face classes may be considered if the following conditions are met: the school has appropriate policies and protocols in place for preventing transmission among its students and staff; the school staff is well-trained on implementing these health protocols It is recommended that appropriate administrative and engineering controls be implemented, in addition to the use of suitable personal protective equipment.[10]

The most up-to-date information was compiled using the most recent statistics from the National Covid-19 Vaccination Dashboard maintained by the Department of Health of the Republic of the Philippines. In terms of the Department of Health's (DOH) Statistical Data for the Philippines, the most up-to-date and comprehensive data that were collected, in particular on the ten top causes of morbidity, were those from 2019.[11,12,13]

Methods

The population size of respondents include all patients who visited the university clinic for the entire first semester of school year 2021-2022 from which an adequate sample size will be determined using Slovin's Formula. Choosing the confidence level of 95 percent (giving an alpha level of 0.05) and using the 303 total employees plus 3,857 total enrolled students, the formula will yield:

n = N / (1 + N e2)
= 4,160 / (1 + 4,160 * 0.05 2)
= 364.9122807
= 365 population size.

They underwent procedures that will help healthcare providers and researchers accurately describe and diagnose preventable health issues. Clinic visits are categorized into two categories by type. Some people must have a yearly physical and lab exam to receive health care clearance. Some students need medical advice and treatment while at school.

In January 2022, 59.74% (181 of 303 employees) were seen at the clinic. Most of the 3,857 SY 2021-2022 first-semester students attend virtual classes. Only 4.85% (180+ students from three colleges) have visited the clinic, the only ones allowed to attend lessons in the gradual reopening of face-to-face instruction this first semester. Employee participation is expected to equal student participation. The identified respondents are best suited to answer the questionnaire because they were at ground zero, experienced the dangers of being away from home, and were in a school affected by the COVID-19 pandemic.

This study made use the cross-sectional descriptive-correlational technique, with a questionnaire to assess the relevance of preventative interventions. The university clinic personnel employed progressive review to collect data for quantitative analysis. Referring to meticulously recorded individual health records reduced data collection while providing researchers with all relevant information about the health condition or disease being profiled. This complete recording verified the accuracy of the much-needed basis for labeling the cases: patient vital signs, significant laboratory results, clinical signs and symptoms directly observed by the physician-researcher, diagnosis, and clinic staff actions. Each person's immunization card must be faxed. After signing an informed consent form, participants will be ensured of data confidentiality. This protects their rights during this study. The questionnaire is for qualitative analysis. The researchers created a more detailed questionnaire to assess employees and students returning to face-to-face teaching at the University of La Salette during SY 2021–2022.

Respondents were instructed to rate the level of contribution to the eventual success of control of the spread of Covid-19. Data analysis and interpretation were based on the mean and percentages. The following arbitrary limitations of description will qualitatively understand the mean responses.

Likert Scale	Limits of Description	Interpretation
5	4.50 – 5.00	To a Very Great Extent
4	3.50 – 4.49	To a Great Extent
3	2.50 – 3.49	To a Minimal Extent
2	1.50 – 2.49	To a Very Minimal Extent
1	0.10 – 1.49	No effect at all

Data Analysis. The analysis of data includes descriptive and inferential statistics. The data was processed by experts in the field of statistics with the use of Statistical Package for Social Sciences (SPSS) version 28.

Results

1. Respondents' Characteristic

The actual number of identified respondents was three hundred sixty eight (368), made up of one hundred sixty four (164) employees and two hundred four (204) students. They were classified into Group I – those who sought consultation due to some illness and/or were screened as having health concerns during their clinic visit with one hundred thirty nine (139) respondents (37.8% of total) who were classified under Group I, seventy six (76) of whom were employees and sixty three (63) were students, and Group II – those who complied with the mandatory health check-up, and were subsequently found to be without any notifiable health concern with two hundred twenty nine (229) were classified (62.2% of total), eighty eight (88) of whom were employees and one hundred forty one (141) were students. Their comparative profile in relation to the total study population is presented in Table 1:

Table 1. Comparative Profile of Employee/Student respondents who consulted and/ or were Screened during routine check-up (Group I) & Employees/Students who complied with mandatory clinic visit and were found healthy (Group II)

	Gr I-Consulted / Screened		**Gr II-Compliant Clinic Visit**		**Study Population**	
Characteristics	Incidence & (%) N=**139**		Incidence & (%) N=**229**		Incidence & (%) N=**368**	
Age in years						
15 - 24	66	47.5%	155	67.7%	221	60.1%
25 - 34	23	16.5%	30	13.1%	53	14.4%
35 - 44	16	11.5%	20	8.7%	36	9.8%
45 - 54	18	12.9%	17	7.4%	35	9.5%
55 and above	16	11.5%	7	3.1%	23	6.3%
	139		**229**		**368 = 100.0%**	
Gender						
Male	43	30.9%	91	39.7%	134	36.4%
Female	96	69.1%	138	60.3%	234	63.6%
	139		**229**		**368 = 100.0%**	
Marital Status						
Married	53	38.1%	42	18.3%	95	25.8%
Single, Separated, Widower, Widow	86	61.9%	187	81.7%	273	74.2%
	139		**229**		**368 = 100.0%**	
College of Student Respondent						
Accountancy	0	0.0%	0	0.0%	0	0.0%
Arts and Sciences	0	0.0%	0	0.0%	0	0.0%
Business Education	0	0.0%	1	0.5%	1	0.5%
Criminology	0	0.0%	0	0.0%	0	0.0%
Education	9	4.4%	26	12.7%	35	17.2%
Engineering and Architecture	0	0.0%	0	0.0%	0	0.0%
Information Technology	3	1.5%	13	6.4%	16	7.8%
Law	0	0.0%	0	0.0%	0	0.0%
Medicine & Allied Medical Programs	23	11.3%	40	19.6%	63	30.9%
Nursing, Public Health and Midwifery	28	13.7%	61	29.9%	89	43.6%
	63	30.9%	141	69.1%	204	100.0%
Status of Employee Respondent						
Administration	1	0.6%	1	0.6%	2	1.2%
Deans	4	2.4%	3	1.8%	7	4.3%
Office Heads	6	3.7%	2	1.2%	8	4.9%
Coordinators	1	0.6%	2	1.2%	3	1.8%
Regular Faculty	15	9.1%	10	6.1%	25	15.2%
Probationary Faculty	18	11.0%	32	19.5%	50	30.5%
Non-teaching Personnel	29	17.7%	21	12.8%	50	30.5%
Part-time / Retired-rehired	2	1.2%	16	9.8%	18	11.0%
Outsourced Personnel	0	0.0%	1	0.6%	1	0.6%
	76	46.3%	88	53.7%	164	100.0%
	139 = 37.8%		**299 = 62.2%**		**368 = 100.0%**	

Based on the obtained data, the total study population was 368. Majority of the participants were in the age bracket 15-24 (60.1%), female (63.6%), single (74.2%), most of the student-participants are from the college of nursing, public health and midwifery (43.6%) and most of the employee-participants are probationary faculty (30.5%) and non-teaching personnel (30.5%).

Presentation of public health issue data

Table 2. Comparative Statistics of Regional Leading Causes of Morbidity (2019) to ULS Employees and ULS Students Leading Causes of Morbidity (2021)

	Cagayan Regional Ranking	**ULS Employees/ Students Ranking**
2019 DOH Ten Leading Causes of Morbidity	Incidence and (%) N=**2,642,727**	Incidence and (%) N=**139**
1. Acute Respiratory Tract Infection	1,164,944 44.08%	
2. Hypertension	466,383 17.65%	(2) 29 26.62%
3. Urinary Tract infection	224,859 8.51%	(1) 37 20.86%
4. Lower Respiratory Tract Infction	185,945 7.04%	(8) 4 2.88%
5. Acute Watery Diarrhea	132,025 5.00%	
6. Pneumonia	126,491 4.79%	
7. Skin Disease	98,578 3.73%	(9) 4 2.88%
8. Animal Bites	89,082 3.37%	
9. Bronchitis	77,702 2.94%	
10. Influenza	76,718 2.90%	
	2,642,727 100 %	
Other ULS Leading Causes		
3. Psychosomatic Disorder		21 15.11%
4. Flu, other viral infections		19 13.67%
5. Neuro-muscular disorders		9 6.47%
6. Metabolic disorders/dysmenorrhea		7 5.04%
7. Syncope/Hypotension		6 4.32%
10. Headache		3 2.16%
		139 100.00 %

Table 2 presents a list of the ten leading causes of morbidity culled from the 2019 DOH statistics for the Cagayan Valley Region [10]. Side by side with it, is the 2021 list for the ten leading causes of morbidity among the 139 ULS employees/students who had been grouped separately from the rest of the 368 total university clinic visitors during first semester SY 2021-2022, for being identified as having sought consultation for an illness or having been screened as someone with a health concern during the mandatory health check-up.

Lower Respiratory Tract Infection is classified separately from Pneumonia and Bronchitis in DOH data. The ULS clinic classified acute upper respiratory infection (flu-like symptoms) as "Flu, other viral infections" and sent patients home. That would mean that the ULS data of 19 cases (ranked 4) of Flu, if reclassified as Acute respiratory tract infection like the DOH data, would make all top 4 leading causes of morbidity almost identical. DOH and ULS lists placed hypertension second. Urinary Tract Infection ranked 3rd in DOH and 1st in ULS lists. The DOH ranked skin diseases 7th and the ULS 9th. Five of the top ten causes of morbidity in Cagayan Valley Region were similar to those in the ULS study population. Psychosomatic disorder (ranked 3 in the ULS data) is a notable morbidity cause not listed in the DOH list. Its causes include mental health disorders like anxiety and depression, overeating, and the two-year COVID-19 pandemic. The 2019 statistical data predated Covid-19.

Table 3. Comparative Statistics of Provincial Leading Causes of Morbidity (2019) to ULS Employees and ULS Students Leading Causes of Morbidity (2021)

	Isabela Provincial Ranking		**ULS Employees/ Students Ranking**	
2019 DOH Ten Leading Causes of Morbidity	Incidence and (%) N=**53,899**		Incidence and (%) N=**139**	
1. Acute Respiratory Infection	30,572	56.72%		
2. Animal Bites	5,383	10.91%		
3. Hypertension	5,183	9.62%	(2) 29	26.62%
4. Skin disease	3,701	6.87%	(9) 4	2.88%
5. Urinary Tract Infection	2,543	4.72%	(1) 37	20.86%
6. Acute Watery Diarrhea	2,162	4.01%		
7. Pneumonia	2,092	3.88%		
8. TB All Forms	964	1.79%	(8) 4	2.88%
9. Acute Hemorrhagic Fever	447	0.83%		
10. Gonorrhea	356	0.66%		
	53,899	**100 %**		
Other ULS Leading Causes				
3. Psychosomatic Disorder			21	15.11%
4. Flu, other viral infections			19	13.67%
5. Neuro-muscular disorders			9	6.47%
6. Metabolic disorders/dysmenorrhea			7	5.04%
7. Syncope/Hypotension			6	4.32%
10. Headache			3	2.16%
			139	**100.00 %**

Among the 10 leading causes of morbidity at the Isabela provincial level, the top 5 leading causes of morbidity include acute respiratory infection (56.72%), animal bites (10.91%), hypertension (9.62%), skin disease (6.87%), and urinary tract infection (4.72%). The five among the ten leading causes of morbidity in the ULS study have almost the same rankings as they had in the provincial comparative statistics. The "preventable" communicable diseases of acute respiratory infection, skin diseases, urinary tract infection, and lower respiratory infection (i.e., TB in all forms) and hypertension (a non-communicable disease) showed comparable frequencies and rankings in both the DOH Isabela Provincial and ULS listings of ten leading causes of morbidity.

Table 4. Causes of Morbidity (2019) with ULS Employees/Students Population at risk to its Ten Leading Causes of Morbidity (2021)

	Isabela Provincial Population		**ULS Employees/ Students Population**	
Ten Leading Causes of Morbidity	Incidence and (%) N=**1,668,753** (2019)		Incidence and (%) N=**4,160** (2021)	
Identified Population at risk to the identified 10 leading causes of morbidity	53,899	3.23%	139	3.34%
The rest of the population	1,614,854	96.77%	4,021	96.66%
Total population	**1,668,753**	**100.00 %**	**4,160**	**100.00 %**

There is a very close representation of the population distribution as to the leading causes of morbidity at the Isabela provincial level and that of the ULS total employee-student population. The 139 identified cases comprise 3.34% of the ULS population, which is clearly representative of the 53,899 identified cases that comprise 3.23% of the Isabela provincial population. The 4,160 total ULS population is the sum of the 303 total employees and 3,857 students enrolled during the first semester of SY 2021–2022, which was the identified period when the research was conducted.

Presentation of Covid-19 Vaccination data

Based on the table, 303, or 100%, of the employees had a complete dose of COVID-19 vaccination, and 2,719, or 70.50%, among the students; 412, or 10.68%, accounted for those students who had their first dose, and 726, or 18.82%, opted not to be vaccinated. This data is higher than the data at the regional level, where the first dose only accounts for 2,158,368 (52.88%), those with a complete dose for 1,545,405 (37.86%), and non-vaccinated for 378,144 (9.26%).

Qualitative Analysis of the respondent's perception on preventive measures against communicable diseases

Table 5. Comparative Statistics of Covid-19 Vaccination Status of Cagayan Valley Region II to ULS Employee and ULS Students as of Mar 17, 2022

	Cagayan Valley R II (DOH latest data)		**ULS Employees**		**ULS Students**	
Covid-19 Vaccination Given	Incidence and (%)) N=**4,081,917**		Incidence and (%) N=**303**		Incidence and (%) N=**3,857**	
First Dose Only	2,158,368	52.88%	0	0.00%	412	10.68%
Complete Dose	1,545,405	37.86%	303	100.00%	2,719	70.50%
Non-vaccinated	378,144	9.26%	0	0.00%	726	18.82%
		100.00%		100.00%		100.00%

Table 6. Mean Perceived Responses on Acts to be mandatorily followed inside the campus

Acts to be mandatorily followed inside the campus	**Group I –** Consulted / Screened N = 139		**Group II –** Complied w/ Mandatory Clinic Visit N = 229	
	Weighted mean	Descriptive Interpretation	Weighted mean	Descriptive Interpretation
Wearing face mask every time, everywhere	4.93	To a Very Great Extent	4.89	To a Very Great Extent
Wearing of face shields whenever LGU alert levels are elevated	4.47	To a Great Extent	4.45	To a Great Extent
Maintenance of 1.5 meter social distancing/avoidance of crowding	4.71	To a Very Great Extent	4.76	To a Very Great Extent
Following designated arrowed paths along corridors & roadways	4.75	To a Very Great Extent	4.74	To a Very Great Extent
Total Mean	4.71	To a Very Great Extent	4.71	To a Very Great Extent
Over-all Mean			4.71	To a Very Great Extent

Both groups perceived the acts to be mandatorily followed inside the campus "To a Very Great Extent," with a total mean of 4.71. Further, all items were perceived by both groups "To a Very Great Extent," except for the item on "wearing face shields whenever LGU alert levels are elevated," which is perceived as "To a Great Extent" with a weighted mean of 4.47 and 4.45, respectively. Two practical reasons came up in the informal interview with those who scored it so low: 1) the inconvenience the face shield provides when they are worn, causing breathing and even visual problems to the users; and 2) not all of the population is willing to buy face shields all the time, which, like the face masks, although less frequently, should be replaced regularly for hygienic purposes.

Table 7. Mean Perceived Responses on Procedures to be followed at the Gate / School Entrance

Procedures to be followed at the Gate / School Entrance	**Group I –** Consulted / Screened N = 139		**Group II –** Complied w/ Mandatory Clinic Visit N = 229	
	Weighted mean	Descriptive Interpretation	Weighted mean	Descriptive Interpretation
Mandatory thermal scanning	4.90	To a Very Great Extent	4.91	To a Very Great Extent
Hand sanitizing with alcohol or other sanitizers	4.89	To a Very Great Extent	4.89	To a Very Great Extent
Presentation of vaccination card (Anti-Covid 1st, 2nd or booster dose)	4.91	To a Very Great Extent	4.89	To a Very Great Extent
Daily attendance signing and/or filling up questionnaires for first time visitors	4.80	To a Very Great Extent	4.81	To a Very Great Extent
Total Mean	4.86	To a Very Great Extent	4.88	To a Very Great Extent
			4.87	To a Very Great Extent

Both groups perceived the procedures to be followed at the gate/school entrance "To a Very Great Extent," with a total mean of 4.86 and 4.88, respectively. There is a small difference in the ratings of both groups regarding the daily attendance, signing, and/or filing of questionnaires for first-time visitors, which is slightly lower (4.80) than the average (4.90) rating for both groups. Overall, all procedures have been approved.

Table 8. Mean Perceived Responses on Annual Examination to Supplement Physical Examination

Annual Examination to Supplement Physical Examination	**Group I –** Consulted / Screened N = 139		**Group II –** Complied w/ Mandatory Clinic Visit N = 229	
	Weighted mean	Descriptive Interpretation	Weighted mean	Descriptive Interpretation
Complete blood count	4.70	To a Very Great Extent	4.70	To a Very Great Extent
Routine urinalysis	4.68	To a Very Great Extent	4.68	To a Very Great Extent
Chest X-ray	4.65	To a Very Great Extent	4.63	To a Very Great Extent
Drug test	4.53	To a Very Great Extent	4.50	To a Very Great Extent
Total Mean	4.64	To a Very Great Extent	4.63	To a Very Great Extent
			4.635	To a Very Great Extent

Both groups perceived the annual examination to supplement physical examination "To a Very Great Extent," with a total mean of 4.64 and 4.63, respectively. Both groups approve of the annual laboratory examination used to supplement the physical examination, with almost no significant difference. The fourth laboratory examination, the "drug test," nearly merited the next-lowest rating on the scale, particularly for Group II respondents. This could be attributed to the fact that students and employees, particularly those classified as Group II with no health issues, find the test more appropriate for a less frequent requirement, such as once every two years or less frequently. In addition, it is important to note that the weighted averages are slightly lower than those of the previous two categories of anti-Covid preventative measures. These laboratory tests are not specifically anti-Covid, but they are preventative measures against diseases that can be avoided.

Table 9. Mean Perceived Responses on Primary Care Extended by University Clinic Personnel to Patients

Primary Care Extended by University Clinic Personnel to Patients	**Group I –** Consulted / Screened N = 139		**Group II –** Complied w/ Mandatory Clinic Visit N = 229	
	Weighted mean	Descriptive Interpretation	Weighted mean	Descriptive Interpretation
Taking of vital signs, blood pressure, and body mass index (BMI)	4.86	To a Very Great Extent	4.72	To a Very Great Extent
Interpretation and explanation of laboratory exam results	4.74	To a Very Great Extent	4.63	To a Very Great Extent
Concomitant primary care advice whenever applicable	4.73	To a Very Great Extent	4.70	To a Very Great Extent
Guide and facilitate vaccination programs (anti-Covid, Flu, Pneumo)	4.81	To a Very Great Extent	4.70	To a Very Great Extent
Total Mean	4.79	To a Very Great Extent	4.69	To a Very Great Extent
			4.74	To a Very Great Extent

Both groups perceived the primary care extended by university clinic personnel to patients "To a Very Great Extent," with a total mean of 4.79 and 4.69, respectively. Again, there is widespread approval of the primary care provided by clinic staff to Group I and Group II patients. However, Group II respondents have a slightly lower rating for the following: 1) 4.72 rating for taking vital signs, BP, and BMI by Group II versus 4.86 rating by Group I; 2) 4.63 rating for interpretation or

explanation of lab exam results by Group II versus 4.74 rating by Group I; and 3) 4.70 rating for guiding and facilitating vaccination programs by Group II versus 4.81 rating by Group I. These differences indicate that the majority of Group I respondents, who had health issues to begin with, were better able to value the additional services provided than their counterparts in Group II.

Table 10. Mean Perceived Responses on Attitudes of Employees and Students with Regards Health Protocols

Attitudes of Employees and Students with Regards Health Protocols	**Group I –** Consulted / Screened N = 139		**Group II –** Complied w/ Mandatory Clinic Visit N = 229	
	Weighted mean	Descriptive Interpretation	Weighted mean	Descriptive Interpretation
Have an open mind in understanding health protocols	4.93	To a Very Great Extent	4.87	To a Very Great Extent
Maintain patient & conscientious compliance of health protocols	4.86	To a Very Great Extent	4.83	To a Very Great Extent
Convince known non-compliant officemates/classmates to reconsider	4.71	To a Very Great Extent	4.75	To a Very Great Extent
Promote anti-Covid vaccination as preventive measure to other people	4.86	To a Very Great Extent	4.86	To a Very Great Extent
Total Mean	4.84	To a Very Great Extent	4.83	To a Very Great Extent
			4.835	To a Very Great Extent

Both groups perceived the attitudes of employees and students with regards to health protocols "To a Very Great Extent," with a total mean of 4.84 and 4.83, respectively. The weighted averages are all at the upper end of the rating scale range, which is positive feedback for everyone. Although still high in their rating, Group I respondents, interestingly, rated 4.71 for the attitude of "convince known non-compliant officemates or classmates to reconsider," while Group II rated it 4.75.

Table 11. Summary of Perceived Responses on Preventive Measures against COVID-19 and Other Communicable Diseases

Preventive Measures against COVID-19 and Other Communicable Diseases	**Weighted Mean**	**Descriptive Interpretation**
Acts to be mandatorily followed inside the campus	4.71	To a Very Great Extent
Procedures to be followed at the Gate / School Entrance	4.87	To a Very Great Extent
Annual Examination to Supplement Physical Examination	4.635	To a Very Great Extent
Primary Care Extended by University Clinic Personnel to Patients	4.74	To a Very Great Extent
Attitudes of Employees and Students with Regards Health Protocols	4.835	To a Very Great Extent
Total Mean	4.758	To a Very Great Extent

Both groups perceived the preventive measures against COVID-19 and other communicable diseases "To a Very Great Extent," with a total mean of 4.758. The weighted averages are all near the top of the rating scale range, which is good news for everyone. Although still highly rated, the topic on the annual examination to supplement the physical examination has the lowest rating. This could be attributed to the fact that students and employees believe the test is more appropriate for a less frequent requirement, such as once every two years or less frequently.

Discussion

Analysis of Participants' Demographic Profile

Approximately 74.5% of the individuals involved in the study are under the age of 35. These collective employs a workforce of merely 71 individuals. A total of 93 individuals who were 35 years old or older, representing 25.6% of the sample, were found to be employed. At the extremes of age, there are distinct variations in the ratios and proportions between Group I and Group II. The demographic composition of Group II indicates that 67.7% of its population falls within

the age range of 15 to 24 years. This implies that comparatively younger individuals exhibit better health and necessitate less medical intervention. The proportion of individuals aged over 55 in Group I is 11.5%, while in Group II it is 3.1%. This implies that individuals in advanced-age cohorts exhibit a higher propensity to undergo health screenings or receive medical counseling during routine medical evaluations.

Groups I and II exhibit a gender distribution of 36.4% males and 63.6% females, which is comparable to that of the general population. In Group II, there were 49 male employees who were not consulted or screened, while 39 female employees were also not consulted or screened. The first group, comprising employees who sought consultation or routine check-ups, exhibited a gender disparity with a higher proportion of women (49) than men (27), almost twice as much. The aforementioned observation implies that female employees exhibit a higher tendency to pursue medical consultation and manifest greater vulnerability to health concerns detected during customary medical examinations.

The marital status of respondents belonging to Group I exhibits variation. The proportion of individuals seeking consultation or health screenings who are married is approximately 40% in Group I, whereas in Group II, the corresponding figure ranges from 18% to 25%. Individuals who are married exhibit a higher likelihood of seeking medical attention through clinic visits or undergoing regular screening procedures.

The study's sample size was limited to only half of the colleges due to the fact that their respective student populations were exclusively enrolled in in-person classes during the initial semester. There was a response from at least one employee in each of the nine employment statuses. Based on a study conducted on 164 employees who availed themselves of clinical services, it was found that 37% of the overall population belongs to Group I. This group comprises individuals who suffer from ailments that necessitate medical consultation or screening during regular health check-ups. The probability of occurrence increases to 46% among the employees, which constitute nearly half of the total sample population.

Presentation of public health issue data

During the first semester of SY 2021–2022, a total of 368 university clinic visitors sought consultation for an illness or were screened for a health concern during the mandatory health check-up. Among these visitors, 139 were ULS employees and students, who were grouped separately. The ten primary causes of morbidity were identified for this group. The data provided by the Department of Health (DOH) distinguishes between Lower Respiratory Tract infections, Pneumonia, and Bronchitis. Patients diagnosed with acute upper respiratory infections were discharged from the ULS clinic with prescriptions for treatment of flu and other viral infections. If the ULS data pertaining to 19 cases of flu, which are ranked 4, were to be reclassified as Acute Respiratory Tract Infection, similar to the DOH data, then the four primary causes of morbidity would become almost identical. The lists compiled by the Department of Health (DOH) and the University of the Philippines Manila-National Institutes of Health (UPM-NIH) rank hypertension as the second leading cause of morbidity in the Philippines. According to the Department of Health (DOH) rankings, UTI has secured the third position, while it has been ranked first in the University of La Salette (ULS) rankings. According to the Department of Health (DOH), skin diseases were ranked 7th, while the University of Lourdes System (ULS) ranked them 9th. The study population of ULS exhibited a prevalence of five out of the top ten causes of morbidity in the Cagayan Valley Region. A significant cause of morbidity that is not on the Department of Health's list is psychosomatic disorder, which came in third in the ULS data. The occurrence of overeating, anxiety, and depression can be attributed to the prolonged COVID-19 pandemic that has persisted for two years. The statistics for 2019 were published prior to the present time. COVID-19. The leading causes of morbidity in Isabela are acute respiratory infections, accounting for 56.72% of cases, followed by animal bites at 10.91%, hypertension at 9.62%, skin disease at 6.87%, and urinary tract infections at 4.72%. The ULS study revealed that five out of the top ten causes of morbidity exhibit a similar ranking to the comparative statistics of the province. The DOH Isabela Provincial and ULS have identified the top ten causes of morbidity, which include communicable diseases that are preventable, such as acute respiratory infection, skin diseases, urinary tract infection, and lower respiratory infection (including TB in all forms). Additionally, hypertension, which is a non-communicable disease, also had similar frequencies and rankings in both lists. The distribution of morbidity causes in Isabela province is consistent with that of the population, which comprises employees and students of the University of La Salette. The population of Isabela province is 53,899, which accounts for 3.23% of the total population, while the population of ULS is 3.34%. The ULS population of 4,160 individuals comprises 303 personnel and 3,857 pupils who have registered for the initial semester of the academic year

2021-2022, which is designated as the research phase.

Presentation of Covid-19 Vaccination data

Both cohorts held the belief that the aforementioned actions were obligatory within the campus premises to a significant degree, as indicated by a mean score of 4.71. The two groups assigned a rating of "To a Very Great Extent" to all items, with the exception of "wearing face shields whenever LGU alert levels are elevated," which had a weighted mean of 4.47 and 4.45, respectively. The colloquial discussion conducted with individuals who obtained low scores exposed two pragmatic rationales: There are two primary concerns regarding the use of face shields. Firstly, the discomfort caused by wearing them may result in breathing and vision difficulties. Secondly, the regular replacement of face shields for hygienic purposes may not be feasible for all individuals, as some may be disinclined to purchase them.

With mean scores of 4.86 and 4.88, respectively, both groups rated the gate and school entrance procedures as being "To a Very Great Extent." Both cohorts have assigned a rating of 4.80 to the daily attendance, signing, and/or filing of questionnaires for first-time visitors, which is marginally lower than the mean rating of 4.90. The procedures have been granted approval.

With respective means of 4.64 and 4.63, both cohorts demonstrated a high level of agreement that the annual examination served as a valuable addition to physical assessments. There is minimal disparity between the two groups in their endorsement of the yearly laboratory assessment as a complementary measure to the physical examination. The fourth laboratory examination, commonly known as the "drug test," was rated relatively low, particularly among participants belonging to Group II. Individuals belonging to Group II who do not have any health concerns, including both students and employees, exhibit a preference for less frequent testing, such as once every two years. It is worth mentioning that the weighted averages exhibit a slightly lower value in comparison to the preceding two categories of preventive measures against COVID-19. The aforementioned laboratory examinations serve to avert avoidable illnesses but do not offer protection against COVID-19.

Both cohorts provided a rating of "To a Very Great Extent" for primary care services offered by the university clinic, with a mean score of 4.79 and 4.69, respectively. The primary care provided by clinic staff for patients belonging to Group I and Group II has been positively received once again. The respondents belonging to Group II have assigned a relatively lower rating to the following: The results indicate that Group II obtained a mean score of 4.72 in the assessment of vital signs, blood pressure, and body mass index, while Group I achieved a slightly higher mean score of 4.86. In contrast, Group II obtained a mean score of 4.63 in the interpretation of laboratory examination results and 4.70 in the guidance and facilitation of vaccination programs. The observed dissimilarities indicate that the majority of participants in Group I, who had pre-existing health conditions, exhibited a greater capacity to appreciate the supplementary services in comparison to those in Group II.

The two groups assigned high ratings to attitudes towards health protocols for employees and students, with a mean score of 4.84 and 4.83, respectively. The weighted averages have been observed to surpass the rating scale, thereby indicating positive feedback for all parties involved. The task of persuading non-compliant colleagues or classmates to reconsider was rated 4.71 by Group I and 4.75 by Group II. The two groups' mean rating of 4.758 indicates a high degree of agreement in their assessments of the efficacy of measures intended to prevent COVID-19 and other communicable diseases. The proximity of the weighted averages to the upper end of the rating scale is advantageous for all parties involved. Although the annual examination designed to complement the physical examination has received a relatively low rating, it is still regarded as highly valuable. The frequency of administering tests is a topic of concern among students and employees, who advocate for a reduction in the frequency of testing to biennially.

Conclusions

From the findings of the study, the following conclusions are drawn:

With regards to health concerns and their demographic distribution in the context of maintaining optimal school health in a school campus that has resumed in-person learning, it can be deduced that the percentage of listed cases of the ten primary causes of morbidity among the population at risk in the University of La Salette is comparable to that of the listed cases of the ten primary causes of morbidity among the population at risk in Isabela province.

1. Half of the top ten causes of morbidity in ULS are also identified and ranked in the list of leading causes of morbidity in the province of Isabela, comprising a total of five similar causes. There are four communicable diseases that can be identified: acute respiratory tract infections, Urinary Tract infections, Lower Respiratory infections, and Skin Diseases.

Hypertension is the fifth non-communicable disease. All five of these diseases are deemed preventable, rendering them suitable targets for the field of Preventive Medicine.

2. The vaccination status against COVID-19 among the collective employee and student population of ULS has attained the desired level of herd immunity, surpassing that at the regional level.
3. The initial null hypothesis posited that there is no statistically significant distinction between the health data collected from a general population residing in a particular region of the country and that of a school population with respect to the primary causes of morbidity and the current COVID-19 vaccination rate of the vulnerable population. This hypothesis is expected to be upheld.

In relation to the anticipated disposition of all stakeholders of ULS with respect to adherence to health protocols, which also pertains to the preservation of the utmost health of the school on a campus that is authorized to resume in-person instructional activities, it can be deduced

4. that the cohort of employee and student participants (Group I) who had pre-existing health conditions have acknowledged the influential impact of the anti-COVID preventive measures "to a considerable degree," and there is no noteworthy statistical disparity with the perception of those who were classified (Group II) as being free of health issues.
5. The employee and student populations in both groups evaluated each of the suggested health protocol attitudes with a rating of "to a very great extent."
6. The second null hypothesis posited, namely, "There exists no statistically significant difference in the degree of recognition of the importance of health protocols between two distinct groups within the ULS population, one comprising individuals with health concerns during the research period and the other comprising those without such concerns," must be upheld.

Recommendations

Based on the aforementioned findings, the following suggestions are proposed:

1. The ultimate outcome of this investigation is intended to be disseminated to the participants, encompassing both staff and pupils. It is advisable to reinforce the focus on the collective feedback of the vast majority concerning the anticipated disposition towards health protocols, with the findings of the investigation serving as supplementary evidence.
2. To ensure the credibility of its utility, the manuscript will be submitted to the ULS administration for their examination, particularly to function as a foundation for their determination, whenever proposals on how to tackle urgent health issues within the campus are raised by the institution's health division.
3. It is advisable to conduct a parallel investigation with a significantly larger sample size, encompassing the remaining students from other colleges who have recently commenced in-person instruction during the second semester of the academic year 2021-2022.
4. The final report will be disseminated to the medical community, particularly those involved in public health at the City Health Office and the Department of Family and Community Medicine of the Southern Isabela Medical Center. This will serve to enhance the preparatory measures for the complete implementation of universal health care with a focus on Preventive Medicine.

Conflicts of Interest Statement

The authors have no conflicts of interest to declare.

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