

# Readiness, Perception, and Attitude toward Interprofessional Education among Students in a Stepladder and Community-based Health Science Tertiary Institution: A Cross-sectional Study

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## ABSTRACT

**Background.** Interprofessional education (IPE) is a kind of education that fosters an environment of teamwork and collaboration among various healthcare professionals, such as midwives, nurses, and doctors. Identifying midwifery, nursing, and medical students' IPE readiness, perception, and attitude is critical to formally and effectively implement IPE programs in the curriculum.

**Objective.** This study determined the readiness, perception, and attitude for IPE and the relationships between them, including the personal characteristics of the Midwifery, Nursing, and Doctor of Medicine students enrolled in a stepladder and community-based health science tertiary institution in the Philippines.

**Methods.** A descriptive cross-sectional design was employed involving 166 students selected through a stratified random sampling technique who were drawn from the three health programs. The Readiness for Interprofessional Learning Scale (RIPLS), Interdisciplinary Education Perception Scale (IEPS), and Interprofessional Attitude Scale (IPAS) were used to assess students' readiness, perception, and attitude toward IPE, respectively. Pearson's r-moment correlation, t-test, and one-way ANOVA were used to determine correlations between the variables.

**Results.** High scores were demonstrated on the students' readiness, perception, and attitude toward IPE. A significant correlation was found between prior exposure and readiness to IPE. Further, a significant and positive correlation was found between the students' readiness, perception, and attitude toward IPE. Preparing students for interdisciplinary learning may promote positive perceptions and attitudes.

**Conclusions.** Midwifery, nursing, and medical students had a high readiness, perception, and attitude toward IPE. IPE readiness, perception, and attitude were correlated to one another. The study recommends formally incorporating IPE in the stepladder and community-based curriculum, such as embedding IPE concepts and competencies in the program specifications.

**Keywords:** *interprofessional education, midwifery, nursing, medicine*

## INTRODUCTION

Interprofessional education (IPE) occurs when students from two or more professions come together to learn from, about, and with one another to enhance teamwork and quality patient care.<sup>1</sup> It is an essential academic strategy in the health sciences to mold students for future interprofessional collaboration (IPC). Collaboration and communication were identified as part of the essential domains of the WHO's global framework for universal health coverage, which guides the standards for education and practice in primary care

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settings among healthcare workers.<sup>2</sup> Given these concepts, it is integral to consider IPE as an academic method that can be applied in health science education and health care practice and systems, especially in primary care settings.

### Review of Literature

Uniprofessional education is the typical model employed in various delivery of instruction in health professions education. Students are trained and educated with classmates and peers of the same discipline or profession.<sup>3</sup> As such, in the formal academic training of health care professionals, they have been accustomed to learning the course within their specific discipline with minimal inputs on interdisciplinary approaches until they start to be trained in clinical settings.<sup>4</sup> Only during actual practice and employment in the healthcare field will these healthcare professionals be immersed in a collaborative work environment for optimal care of the patients. Empirical evidence demonstrated an improved perception and attitude toward IPE when this concept is introduced and practiced in formal training and education.<sup>5-7</sup> IPE learning opportunities at this level can positively influence confidence toward better communication across various health professions. As such, students who were trained with an integrated interprofessional curriculum were more likely to be confident not only in terms of communication but also in interprofessional relationships and social interactions with other professionals.<sup>8</sup>

The shortage of healthcare workers has been a prevailing problem, with an estimated 18 million healthcare professionals needed by 2030.<sup>9</sup> The shortage of a health workforce is also evident in the Philippines, especially among midwives, nurses, and doctors.<sup>10</sup> A sustainable and robust healthcare system will largely depend on well-trained healthcare professionals oriented on collaborative practice.<sup>11</sup> Interprofessional collaboration is vital to improve the delivery of care services and health outcomes. Moreover, coupled with a shortage of healthcare workers, there is a maldistribution of the workforce throughout the country.<sup>10</sup> Globally, there was a call to redesign the health professions education that will help produce a competent health workforce who are team players, engage in collaboration, and are sensitive to the provision of patients' needs. IPE promotes collaborative practice and quality patient care. IPE is recognized for fostering diverse professional skills and competencies integral to molding a qualified and relevant health workforce.<sup>12</sup> Furthermore, it develops the role dynamics between healthcare professionals, thereby promoting work efficiency with other healthcare workers.<sup>13</sup>

IPE in the Philippines is currently gaining traction in some universities. Although interprofessional collaboration (IPC) is widely practiced in clinical and community settings, there is little known from various universities and colleges offering medical and allied health programs in integrating IPE into the curriculum. The IPE pilot implementation has been conducted by its advocates and prime movers in the country, and it has produced promising results and learning

insights for future directions.<sup>14,15</sup> However, the pieces of the literature revealed specific barriers to the implementation of IPE initiatives. These include lack of human resources, poor organizational support, curricular differences, variation in learning needs, lack of interest and enthusiasm among students and faculty members, and diversity in the location and setup of the schools.<sup>12,16</sup>

The School of Health Sciences (SHS), a distant unit of the University of the Philippines Manila, was established in 1976 in Tacloban City, Leyte, to address brain drain and maldistribution of the health workforce in the country.<sup>17</sup> This innovative educational program offers a stepladder curriculum that is competency-based and community-based, integrating the training of three programs: Diploma in Midwifery (Community Health Work), Bachelor of Science in Nursing, and Doctor of Medicine.<sup>18</sup> This curriculum has multiple levels of entry and exit that enable the scholar to exit at any level to serve the community equipped with the competency of the level they underwent.<sup>17</sup> Thus, after finishing the program, the scholar and their community have the option to allow them to be employed in their health facility or to continue to the next ladder. Although interprofessional collaboration is one of the program outcomes of the three programs offered by SHS, there is no specific instructional design or curricular program on IPE. As the school's mandate of addressing the brain drain and maldistribution of health human resources seems to be in conjunction with the purposes of IPE, it is interesting to explore how the SHS curriculum and the IPE will interplay.

To start with integrating IPE into the curriculum, it is integral to explore the students' readiness, attitude, and perception of IPE as the primary stakeholders of SHS. Readiness is identified as a predecessor of a student's willingness to be actively involved in the IPE and IPC.<sup>19</sup> Perception of IPE is the student's view or belief on IPE in terms of value and merit for their professional education,<sup>20</sup> while attitude on IPE is the student's mental position or emotion, either positive or negative, towards IPE.<sup>21</sup> IPE may be introduced in the classroom settings in Midwifery, Nursing, and Doctor of Medicine programs as significant concepts and competencies that will prepare them for their actual clinical practice and community immersion as they collaborate with healthcare teams towards quality patient care. Students might portray diverse attitudes and readiness towards IPE and IPC. Their level of preparedness to embrace IPE will depend on their perception, readiness, and attitude. Positive attitudes, perceptions, and readiness for IPE could result in favorable outcomes of interprofessional collaboration. Thus, exploring their perception, attitude, and readiness might provide insights into their willingness to embrace and practice interprofessional collaboration. School administrators and the curriculum committee may gain information and direction towards designing a structured curricular design for IPE while meeting the program outcomes in the Midwifery, Nursing, and Doctor of Medicine and, eventually, fulfilling the school's vision and mission.

## OBJECTIVES

This study determined the readiness, perception, and attitude for IPE and the relationships between including the personal characteristics of the Diploma in Midwifery, Bachelor of Science in Nursing, and Doctor of Medicine students in a stepladder, outcomes-based, and community-based health science tertiary institution in the Philippines. Specifically, the study tested the following hypotheses:

1. There is a significant relationship between the participants' personal characteristics and their readiness, perception, and attitude toward IPE.
2. There is a significant relationship between the student's readiness, perception, and attitude toward IPE.

## MATERIALS AND METHODS

### Study Design and Participants

A descriptive cross-sectional design was employed in this study. The participants were the students from the stepladder programs of the School of Health Sciences (SHS). This institution is a distant unit of the University of the Philippines Manila. Its main campus is in Palo, Leyte, offering the three "ladderized" programs. The unit has three extension campuses in Baler, Aurora, Koronadal City, South Cotabato, and its newest campus in Tarlac City. SHS Baler and SHS Koronadal offer Diploma in Midwifery and BS Nursing programs, while SHS Tarlac offers the Diploma in Midwifery program as it has recently operated. Participants were either in full-time or part-time status, in the classroom, clinical, or having community practicum, and consented to participate in the study. Those students who were not around, on sick leave, or on leave of absence during the data collection were excluded from the study.

### Sampling Technique Used and Sample Size Determination

Samples were drawn from SHS Palo Main Campus only. There were 284 students enrolled on this campus. Raosoft online sampling calculator was used to determine the sample size. From this sampling calculator, one hundred sixty-three (163) participants were needed in the study. The total population of all enrolled students was determined first through the Office of the College Secretary. A stratified random sampling technique was used to select the participants so that every program would have its representatives. Eighty-eight (88) participants are needed from the Diploma in Midwifery program, thirty (30) from the BS Nursing, and forty-five (45) from the Doctor of Medicine program. All students in SHS Palo Main Campus were considered in this study regardless of their age, sex, program, and year level. During the data-gathering period, all students were already exposed to clinical duties and community immersion, which could have exposures already in interprofessional collaboration practice, even to first-year midwifery students.

### Research Instrument

A self-report questionnaire was used to collect the data. It is composed of four types. The first type is a checklist, which determines the personal profile of the participants in terms of age, sex, program of study, ethnicity, and prior exposure to IPE.

The second type assessed the student's readiness for the IPE program in the SHS curriculum using the Readiness for Interprofessional Learning Scale (RIPLS).<sup>22</sup> This is a 19-item tool and categorized into three (3) subscales: 1.) teamwork and collaboration, pertaining to their beliefs on the benefits of shared learning (items 1 to 9); 2.) professional identity, reflecting the positive meanings that an individual holds for different professions (items 10 to 16, three items are negative professional identity and three items are positive professional identity), and 3.) roles and responsibilities, which determine the boundaries that differentiate roles in professional practice (item 17 to 19). Participants were asked to indicate their degree of agreement on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The highest possible overall score for this scale is 95, while its lowest possible score is 19. A higher score indicates a more positive readiness toward IPE. A previous study revealed a good internal consistency reliability with a Cronbach's alpha of 0.80.<sup>23</sup> The Cronbach's alpha of the current study was 0.86.

The third part examined the participant's perception toward IPE using the Interdisciplinary Education Perception Scale (IEPS), remodeled subscale structure by McFadyen et al.<sup>24</sup> This 15-item scale is subdivided into three (3) subscales: 1.) competency and autonomy (8 items); 2.) perceived need for cooperation (2 items); and 3.) perception of actual cooperation (5 items). Participants were asked to indicate their level of agreement on a six-point Likert scale ranging from 1 = strongly disagree to 6 = strongly agree. This scale's highest possible overall score is 90, while its lowest possible score is 15. A higher score indicates a more positive perception toward IPE. The internal consistency reliability of this tool was demonstrated with a Cronbach's alpha of 0.80.<sup>24</sup> The Cronbach's alpha of the current study was 0.89.

The last part determined the students' attitude towards IPE in the SHS using the Interprofessional Attitude Scale (IPAS) by Norris et al.<sup>25</sup> This comprises 27 items divided into five subscales: nine items assessed teamwork, roles, and responsibilities, five items on patient-centeredness, three items on interprofessional biases, four items on diversity and ethics, and six items on community-centeredness. Participants were asked to indicate their level of agreement on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). This scale's highest possible overall score is 135, while its lowest possible score is 27. A higher score indicates a more positive attitude toward IPE. The internal consistency reliability of this tool was demonstrated with a Cronbach's alpha of the subscales ranging from 0.62 to 0.92.<sup>25</sup> The Cronbach's alpha of the subscales of the current study ranges from 0.75 to 0.93.

The RIPLS, IEPS, and IPAS were widely used as standard tools to assess perceived readiness, perception, and attitude among medical and healthcare professional students. Moreover, as they are widely used globally and have been tested for their psychometric properties, they are readily accessible for application.

### Data Collection Process

Administrative clearance to conduct the study was from the Dean of the School of Health Sciences. Upon approval, coordination was made with the Office of the College Secretary to determine the population and the list of students to facilitate sample size determination and sampling. Once completed, the two researchers and one trained research assistant coordinated with the Department Chairs of the three programs for the actual selection of the participants. Written informed consent was obtained from all participants in the study. This signifies voluntary participation and that significant information was provided prior to data collection, such as the purpose of the research and possible benefits, risks, and harm in participating in the study. The survey was conducted face-to-face and through an online portal (e.g., Google Forms). Those surveyed online were contacted first through emails and messengers to obtain consent to participate in the study. Face-to-face surveys were conducted in the SHS Palo Campus. Students were given 24 hours to complete the survey. The completion of the survey form lasted 20 – 30 minutes. The data collection period was two months (January to February 2024). Upon completion, the researchers checked for the completeness and accuracy of completing the survey.

### Data Analysis

After data collection, the data was tallied and coded in MS Excel. Data were then entered into the IBM SPSS ver.29 for analysis. Descriptive statistics include frequency counts, percentages, mean, and standard deviation. Pearson's *r*-moment correlation, *t*-test, and one-way ANOVA were used to determine correlations between the variables. For instance, correlations were tested to students' characteristics as they may pose significant relationships on their level of readiness, perception, and attitude toward IPE. Likewise, correlations were conducted between the three main variables - readiness, perception, and attitude toward IPE. The significance level was set where  $P < 0.05$ .

### Ethical Considerations

Ethical clearance to conduct the study was secured from the registered local ethics board (EVHRDC-ERC-2023-035). Likewise, approval to conduct the study was secured from the Dean of the School of Health Sciences. Written informed consent forms and cover letters were made for all participants. Mere volunteerism was observed in participating in the study. Likewise, relevant information was relayed to each participant in the study prior to the actual survey. Each participant

was allowed to ask questions for clarification before the survey. They were informed that they could withdraw from participating at any point throughout the study, even if they agreed beforehand. Risks in participating in the study include a breach of confidentiality and the consequences of such a breach. To avoid this, confidentiality, anonymity, and data privacy were observed. Only the researchers have access to the survey forms and data. They were not paid nor given tokens in participating in the study. The researchers are faculty members of SHS but declare no conflict of interest in conducting the study. There was no coercion or abuse of authority in recruiting the participants. All data were used only for this study. Only the researchers have access to the data stored in the software application. Raw data were deleted after the completion of the study.

## RESULTS

A total of 166 students participated in the study. Ninety (90) of them were studying for the Diploma in Midwifery program, thirty-one (31) from the BS Nursing, and forty-five (45) from the Doctor of Medicine. The majority of them were females ( $n=132$  or 79.5%), within the age range of 18-22 years old ( $n=82$  or 49.4%), with a mean age of 23.80 years old ( $SD=5.03$  years old), belong to Waray ethnic group ( $n=70$  or 47.6%), and have no prior exposure to IPE ( $n=130$  or 78.3%). Table 1 summarizes the students' personal characteristics.

Table 2 presents the descriptive statistics results of the student's readiness, perception, and attitude toward IPE. Students' readiness was assessed using the RIPLS instrument, their perception on IPE was assessed using the IEPS, and their attitude on IPE was evaluated through the IPAS. In the readiness scale, participants' overall mean score was 80.93 ( $SD=7.83$ ). This indicates a high score and that they are more positively inclined to be ready to be trained and acquire IPE concepts and competencies. Meanwhile, participants' overall mean score on the perception scale was 77.57 ( $SD=8.29$ ), indicating a more positive perception towards IPE. Finally, in the attitude scale, participants' overall mean score was 121.60 ( $SD=8.12$ ), which also suggests a good attitude toward IPE.

Table 3 shows the correlations between students' personal characteristics in terms of age, sex, ethnicity, program of study, and prior exposure to IPE with their readiness, perception, and attitude toward interprofessional education. The results showed that only students' prior exposure to IPE significantly and positively correlated to their readiness ( $t=2.208$ ,  $P=0.020$ ) toward IPE. This indicates that students who had prior exposure to IPE were more likely to be ready for IPE. Thus, hypothesis 1 is partially supported.

The correlations between student's readiness, perception, and attitude toward IPE are presented in Table 4. All three variables were positively and significantly correlated with one another. Specifically, student's readiness was positively and significantly correlated with their perception ( $r=0.286$ ,  $P=<0.001$ ) and attitude ( $r=0.459$ ,  $P=<0.001$ ) toward IPE.

**Table 1.** Descriptive Statistics of Students' Characteristics (n=166)

Characteristic	Frequency	Percentage
<b>Age (in years)</b>		
18-22	82	49.4
23-27	52	31.3
28-32	23	13.9
33-37	6	3.6
38-42	1	0.6
43-47	2	1.2
Mean = 23.80		
SD = 5.03		
<b>Sex</b>		
Male	34	20.5
Female	132	79.5
<b>Ethnicity</b>		
Waray	79	47.6
Bisaya	57	34.3
Tagalog	10	6.0
Ilonggo	4	2.4
Igorot	4	2.4
Ilocano	2	1.2
Cuyunon	2	1.2
Karay-a	2	1.2
Tuwali	2	1.2
Maguindanaon	2	1.2
Subanen	1	0.6
Aklanon	1	0.6
<b>Program of Study</b>		
Diploma in Midwifery	90	54.2
Bachelor of Science in Nursing	31	18.7
Doctor of Medicine	45	27.1
<b>Prior Exposure to IPE</b>		
Yes	36	21.7
No	130	78.3

Moreover, student's perception was positively and significantly correlated with attitude ( $r=0.455$ ,  $P<0.001$ ) toward IPE. This indicates that students who reported high scores in readiness will most likely report high scores in perception and attitude toward IPE. Likewise, those who reported high scores in perception will most likely report high scores in attitude toward IPE. Thus, hypothesis 2 is fully supported.

## DISCUSSION

The purpose of this study was to determine the perception, attitude, and readiness for interprofessional education and the relationships between them, including the personal characteristics among Diploma in Midwifery, BS Nursing, and Doctor of Medicine students in a stepladder, outcomes-based, and community-based health science tertiary institution in the Philippines.

The majority of the participants were from the Diploma in Midwifery program, the entry-level program of the stepladder curriculum of the college. This result conforms with the majority age group, 18-22 years old, the youngest age group of students in the tertiary level. Moreover, most participants were females in the Waray ethnic group, the most common ethnic group in the Eastern Visayas region where SHS Palo is located. Literature has cited that midwifery, including nursing, has been portrayed as a feminine profession.<sup>26,27</sup> With the shortage of healthcare workers and other challenges in the healthcare system, it is integral to address gender-based perceptions, especially on the training ground of these professions. We must cultivate the idea that midwives and nurses have unique placement in the healthcare system, and their professions must be identified as human caring tasks and not as determined by gender. In addition, sometimes the scope of practice overlaps between health professionals such as midwives, nurses, and physicians. With this, interprofessional relationships and collaboration

**Table 2.** Descriptive Statistics of Students' Readiness, Perception, and Attitude toward Interprofessional Education

Variable	n	Minimum	Maximum	Mean	SD
<b>Readiness (RIPLS)</b>					
Teamwork and Collaboration	166	9.0	45.0	41.23	4.65
Professional Identity	166	16.0	35.0	29.61	3.85
Roles and Responsibilities	166	4.0	15.0	10.10	1.90
Overall	166	32.0	92.0	80.93	7.83
<b>Perception (IEPS)</b>					
Competency and Autonomy	166	21.0	42.0	35.60	4.18
Perceived Need for Cooperation	166	6.0	12.0	10.57	1.20
Perception of Actual Cooperation	166	18.0	36.0	31.41	3.54
Overall	166	45.0	90.0	77.57	8.29
<b>Attitude (IPAS)</b>					
Teamwork, Roles, and Responsibilities	166	24.0	45.0	39.41	3.78
Patient-Centeredness	166	16.0	25.0	24.13	1.61
Interprofessional Bias	166	3.0	15.0	10.50	2.39
Diversity and Ethics	166	16.0	20.0	19.46	1.27
Community-Centeredness	166	16.0	30.0	28.10	2.63
Overall	166	92.0	135.0	121.60	8.12

**Table 3.** Correlations between Students' Characteristics and their Readiness, Perception, and Attitude towards Interprofessional Education

Characteristic	Readiness (RIPLS)	Perception (IEPS)	Attitude (IPAS)
<b>Age (years)</b>			
<i>r</i>	0.091	0.001	0.132
<i>P</i> -value	0.246	0.988	0.089
<b>Sex</b>			
Male	4.167	5.076	4.523
Female	4.032	4.978	4.432
<i>t</i>	1.843	0.911	1.585
<i>P</i> -value	0.067	0.364	0.115
<b>Ethnicity</b>			
Waray	4.059	5.033	4.438
Bisaya	4.055	4.950	4.483
Tagalog	4.114	5.219	4.484
Ilonggo	4.171	5.353	4.533
Ilocano	3.992	4.492	4.328
Igorot	3.792	4.514	4.283
Karay-a	3.839	4.651	4.150
Tuwali	4.307	5.028	4.638
Maguindanaon	3.976	4.750	4.347
Subanen	3.778	4.516	3.556
Aklanon	4.317	4.881	4.467
Cuyunon	4.362	5.500	4.789
F	0.559	1.110	1.641
<i>P</i> -value	0.860	0.357	0.092
<b>Program of Study</b>			
Diploma in Midwifery	4.026	4.994	4.412
BS Nursing	4.135	4.984	4.513
Doctor of Medicine	4.073	5.016	4.450
F	0.965	0.034	1.801
<i>P</i> -value	0.383	0.966	0.168
<b>Prior Exposure to IPE</b>			
Yes	4.183	4.998	4.477
No	4.025	4.998	4.443
<i>t</i>	2.208	0.003	0.610
<i>P</i> -value	0.029*	0.998	0.542

**Table 4.** Correlations between Students' Readiness, Perception, and Attitude towards Interprofessional Education

		Readiness	Perception	Attitude
<b>Readiness</b>	Pearson Correlation	1		
	<i>P</i> -value			
<b>Perception</b>	Pearson Correlation	0.286**	1	
	<i>P</i> -value	<0.001		
<b>Attitude</b>	Pearson Correlation	0.459**	0.455**	1
	<i>P</i> -value	<0.001	<0.001	

\*\*Correlation is significant at the 0.01 level (2-tailed).

with professional teams are defining aspects of professional roles. This is a crucial factor as it facilitates identification and recognition of the ideal position and then prevents the threats of territorial boundaries, which commonly arise from gender bias.<sup>26</sup>

Students' readiness, perception, and attitude toward IPE are significant factors that may affect their level of acceptance in this kind of education and for successfully

designing various IPE programs across the Midwifery, Nursing, and Medicine programs in SHS. The overall result of students' RIPLS was high, including its subscales: teamwork and collaboration, professional identity, and roles and responsibilities. Previous studies in the literature demonstrated lower RIPLS overall scores<sup>11,28-30</sup> compared to the current study. Its subscales also demonstrated high scores in teamwork and collaboration, professional identity, and roles and responsibilities. Readiness for IPE necessitates understanding a professional team composed of midwives, nurses, doctors, and allied health professionals, and adapting the respective roles and responsibilities. Prior exposure to IPE enhances readiness for this kind of education. This was demonstrated in the current study, indicating that prior exposure to IPE was the sole factor in this study that had a significant relationship to readiness in IPE. This suggests that early shared learning experiences may pose a significant precursor for the students' development of interprofessional collaboration skills.<sup>11</sup> Furthermore, prior exposure to IPE may educate them in advance about their respective roles and scope of practice, their professional identity, and attitudes to collaborative practice as healthcare workers.<sup>31</sup>

The mean scores of the current study also demonstrated high perceptions of IPE, as reflected in the IEPS. Likewise, the scores of the subscales in competency and autonomy, perceived need for cooperation, and perception of actual cooperation are quite high. These scores were higher compared to previous studies in foreign settings.<sup>30-32</sup> A study involving students from applied medical sciences revealed a higher IEPS score than the current study.<sup>29</sup> Our study also revealed a high score in overall IPAS. This finding was also higher than previous studies.<sup>32,33</sup> Variable results could be attributed to the context or course structure of the educational institutions in the health professions.

This study showed significant relationships between readiness, perception, and attitude toward IPE. Specifically, there was a positive correlation between RIPLS and IEPS, RIPLS and IPAS, and IEPS and IPAS. Previous studies demonstrated a positive correlation between RIPLS and IEPS<sup>30,32,34</sup> and between RIPLS and IPAS.<sup>35</sup> Preparing students for interdisciplinary learning may promote positive perception and an appropriate attitude toward IPE. As such, positive attitudes, perceptions, and readiness for IPE could result in favorable outcomes of interprofessional collaboration. Students could be favorably and willingly ready to embrace and practice interprofessional collaboration. The School of Health Sciences offers a community-based and competency-based health professions education that demonstrates transformative learning environment.<sup>36</sup> The students were immersed in real-life situations in the rural settings as they have a greater number of contact hours for their unique community immersion, community practicums, and community service leaves compared to any Midwifery, Nursing, and Doctor of Medicine programs offered by other colleges and universities across the Philippine archipelago.<sup>17</sup>

These students were also recruited in the principle of social accountability and democratized admission policy wherein the community people endorsed these students for their academic training to become the health professionals needed to serve in their communities. The rural healthcare setting rests on a holistic care approach and serves as a venue for interprofessional education and collaboration integrating various healthcare services and systems towards health promotion and disease prevention at population-based and health promotion across various disciplines.<sup>37,38</sup> Moreover, the stepladder curriculum from Midwifery, Nursing, to Doctor of Medicine programs of SHS may serve as a framework for interprofessional education and collaboration.

The researchers acknowledge some limitations of the study. First, the participants were selected from a particular unit of a state university in the Philippines. Therefore, the results could not be generalized to students in health professions education from other universities and colleges in the country. Second, this study employed a cross-sectional design which only shows the relationships between the variables, not the causality. Third, self-report questionnaire was utilized in gathering the data which may not reflect the actual readiness, perception, and attitude of the participants toward IPE. As such, further studies are suggested to be conducted in this regard especially in conducting studies with triangulation methods and longitudinal designs that will support or refute the findings of the current study and even the previous literature. Nevertheless, the findings of the study may serve as empirical evidence that will support in carefully planning educational strategies for IPE practices.

### Implications and Recommendations of the Study

The findings of the current study may have significant implications to the academe, policymakers, and to the midwifery, nursing, medical, and allied health professions. Firstly, in the academe, health professions educators and administrators may gain insights to formally incorporate IPE in the curriculum of Midwifery, Nursing, and Medical programs. In the study's context, IPE may have been practicing in the transformative learning environment of SHS, but with the formal incorporation of IPE in the curriculum, this will further foster teamwork learning and collaboration in the practice settings among students with other health professionals. Furthermore, widespread implementation of IPE not only in SHS but also to the entire health professions education in the Philippines may be achieved with the formulation of policies, standards, and guidelines relevant to IPE from the policymakers and regulatory bodies of the higher education institutions. By embedding IPE in the curriculum structure, future healthcare professionals such as midwives, nurses, and doctors may have acquired an enhanced competencies in teamwork and collaboration, professional identity and respect, perceived need for cooperation, patient-centeredness, community-centeredness, diversity and ethics, and other significant values in the practice of IPE or IPC.

## CONCLUSIONS

This study demonstrated that midwifery, nursing, and medical students from a stepladder, community-based, and competency-based curriculum had positive readiness, perception, and attitude toward IPE. Prior exposure to IPE impacts readiness to this kind of education. Furthermore, there was a positive correlation between the readiness, perception, and attitude of the students toward IPE. The findings recommend formally incorporating IPE in the curriculum.

### Statement of Authorship

Both authors certified fulfillment of ICMJE authorship criteria.

### Author Disclosure

Both authors declared no conflicts of interest.

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None.

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