



Quality of nursing schools in the Philippines: Trends and evidence from the 2010–2016 Nurse Licensure Examination results

John Robert Bautista, RN, MPH^{a,*}, Geoffrey Ducanes, PhD^b, Clarissa C. David, PhD^c

^aWee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore, Singapore

^bCenter for Integrative and Development Studies, University of the Philippines Diliman, Quezon City, Philippines

^cCollege of Mass Communication, University of the Philippines Diliman, Quezon City, Philippines

ARTICLE INFO

Article history:

Received 3 September 2018

Received in revised form

7 December 2018

Accepted 10 December 2018

Available online December 12, 2018.

Keywords:

Philippines

Licensure examination

Nursing education

Nursing policy

Nursing school

ABSTRACT

Background: The quality of undergraduate nursing programs offered by higher education institutions (HEIs) in the Philippines is usually evaluated using Nurse Licensure Examination (NLE) results.

Purpose: To describe NLE trends in 2010 to 2016, compare low- and high-performing HEIs, and examine the association of HEIs' characteristics with NLE passing rate.

Methods: NLE and HEI data were collected from two Philippine government agencies. Descriptive statistics were used to present NLE trends, while multiple linear regression was used to determine the association of HEI characteristics with NLE passing rate.

Discussion: There was a downward trend for NLE takers and passers from 2010 to 2016. Regression results showed that location, size, type, year of establishment, and student–faculty ratio were associated with NLE passing rate.

Conclusion: HEIs should consider decreasing their student–faculty ratio to improve NLE performance. Relevant government agencies should take measures to improve most HEIs' NLE performance in the Philippines.

Cite this article: Bautista, J.R., Ducanes, G., & David, C.C. (2019, May/June). Quality of nursing schools in the Philippines: Trends and evidence from the 2010–2016 Nurse Licensure Examination results. *Nurs Outlook*, 67(3), 259–269. <https://doi.org/10.1016/j.outlook.2018.12.012>

Introduction

The Philippines is one of the largest exporters of trained registered nurse globally. Traditionally, the Philippines has exported Filipino nurses to the United States of America and Saudi Arabia (Lorenzo, Galvez-Tan, Icamina, & Javier, 2007). Castro-Palaganas et al. (2017) report that between 2008 and 2012, about 90,382, 15,701, and 14,895 Filipino nurses went

to Saudi Arabia, the United Kingdom, and United States of America, respectively. More recently, other countries where demand for Filipino nurses is high include Singapore, United Arab Emirates, and Germany (Castro-Palaganas et al., 2017; Uy, 2016). According to the Philippine Overseas Employment Agency, 92,277 nurses from the Philippines were deployed to other countries between 2012 and 2016 (Hapal, 2017).

* Corresponding author: John Robert Bautista, Wee Kim Wee School of Communication and Information, Nanyang Technological University, 31 Nanyang Link, Singapore 637718, Singapore.

E-mail address: john0028@e.ntu.edu.sg (J.R. Bautista).

0029-6554/\$ - see front matter © 2018 Elsevier Inc. All rights reserved.

<https://doi.org/10.1016/j.outlook.2018.12.012>

The growing demand for nurses in the past decades drives the increase in the number of nursing enrollment and, in consequence, the proliferation of nursing schools in the country (Masselink & Lee, 2010). However, there are concerns if nursing schools in the country can meet the required educational quality for students to pass the Nurse Licensure Examination (NLE)—a major requirement to become a registered nurse in the Philippines. While the quality of nursing program offered by nursing schools can be assessed based on several indicators (e.g., accreditation, quality of students' clinical exposure, and faculty mix), it is unavoidable that the results of licensure examinations draw the most attention when evaluating its quality (Giddens, 2009).

For several government entities, NLE results are used to reflect the quality of nursing education provided to students (Cabanda, 2017). Specifically, the Commission on Higher Education (CHED), along with the Professional Regulation Commission (PRC) and the Board of Nursing (BON), monitor the number and rate of successful examinees as a basis of evaluating whether higher education institutions (HEIs) can continue their nursing programs. For instance, in 2009, CHED issued a warning to 152 nursing schools since these schools had passing rates of below the 5-year national passing rate of 46.14% (Ronda, 2009). Subsequently in 2010, CHED, in consultation with the PRC and BON, issued a moratorium on the opening of new nursing programs due to declining NLE performance (CHED, 2010). In 2013, CHED ordered the termination of nursing programs of 218 out of 491 HEIs due to consistent below average performance of their graduates (Castañeda, 2013). Overall, these incidents serve as a basis to examine recent NLE trends including factors associated with NLE performance of HEIs in the Philippines.

An examination of the local literature showed scarce studies related to NLE performance of HEIs. One of these few studies conducted a comprehensive examination of NLE performance of all HEIs from December 2006 to December 2010 (Rosales, Arugay, Divinagracia, & Palaganas, 2014). The findings showed that public HEIs had higher NLE passing rates than private HEI, and testing centers (an estimate of nursing school location) located in the Visayas region mostly had higher NLE passing rates than other regions. Other studies also found that academic grades (Consad & Tuquero, n.d.; Navarro, Vitamog, Tierra, & Gonzalez, 2011), college admission test scores (Navarro et al., 2011), and nursing aptitude tests scores (Navarro et al., 2011; Ong, Palompon, & Bañico, 2012) were positively associated with NLE ratings in a selection of HEIs. Moreover, some studies also showed that nonaccredited HEIs had lower NLE passing rates than accredited HEIs (Gutierrez, 2016; Rosales et al., 2014).

While such studies exist, several research gaps need to be addressed. First, studies on NLE mostly focused on the performance of students (e.g., Consad & Tuquero, n.d.; Navarro et al., 2011). Second, these studies used data that were not relatively recent, and their findings may not reflect the current situation on NLE

performance (e.g., Consad & Tuquero, n.d.; Gutierrez, 2016; Navarro et al., 2011; Rosales et al., 2014). Third, the quality of statistical analysis employed by some studies is questionable, thus yielding unreliable findings (e.g., Consad & Tuquero, n.d.; Gutierrez, 2016).

This study provides an analysis of NLE based on the results of the 2010 to 2016 NLE to overcome gaps in previous works. Specifically, the study provides relevant trends in NLE results by examining the figures on NLE takers, passers, and passing rate in 2010 to 2016 including 2010 to 2016 passing rates based on HEI location, size, type, and year of establishment. Next, this study also examines profiles of low- and high-performing HEIs and determine if they are significantly different based on several characteristics. Moreover, the study identifies factors associated with the NLE passing rates. These factors include location, size, type, year of establishment, and student–faculty ratio.

Overall, this study contributes to research by providing updated information regarding NLE trends as well as evidence on factors affecting NLE performance among HEIs. Although the data only cover the NLE results between 2010 and 2016, this study differentiates itself from previous works (e.g., Consad & Tuquero, n.d.; Gutierrez, 2016) by providing more reliable results that were derived from robust statistical techniques and using data that is much more recent than previous works (e.g., Gutierrez, 2016; Rosales et al., 2014). More importantly, the study contributes to the literature by providing recommendations that nursing school stakeholders (e.g., deans and faculty members) and regulators (e.g., CHED, PRC, and BON) can use as a basis to develop strategies in improving the quality of nursing education in the Philippines.

Method

Research Design

This study used a descriptive–correlational design to describe NLE trends (2010–2016), compare low- and high-performing HEIs, and identify the association of HEIs' characteristics (i.e., location, size, type, year of establishment, and student–faculty ratio) with NLE passing rates in 2010 to 2016.

Data Collection

Data were acquired from two Philippine government agencies in October 2017. Specifically, PRC provided NLE-related data, and CHED provided data about the HEIs' characteristics. NLE-related data included the number of NLE takers and passers from 2010 to 2016, including NLE passing rates of HEIs from 2010 to 2016. Data obtained from CHED included characteristics of HEIs, such as location (i.e., National Capital Region, Luzon, Visayas, and Mindanao), size (i.e., small: $\leq 2,000$ students; medium: 2,001–10,000; and large: $>10,000$),

type (i.e., state, local, and private), year of establishment (i.e., before 1970, 1970s, 1980s, 1990s, 2000s), and number of enrollees and faculty (for academic year 2015–2016 only). Permission to use the data was acquired from these agencies before conducting the study. No HEIs were named in this study to protect their privacy.

Table 1 shows a summary of HEIs' profiles per year according to location, size, type, and year of establishment. In general, 2014 was the year with the highest number of HEIs, while 2010 had the lowest. Regardless of the year, most HEIs were in Luzon and were classified as small HEIs. There were also more private HEIs than public HEIs (i.e., government-owned state and local HEIs). Most of the HEIs were established before 1970.

Data Analysis

Data were analyzed using IBM SPSS Statistics 23. Descriptive statistics, such as frequency count, mean, and percentages, were used to present NLE trends. Chi-square test and t test were used to determine the statistical difference between low- and high-performing HEIs based on several characteristics (e.g., location, size, number of takers and passers, and student–faculty ratio). Multiple linear regression was used to determine whether characteristics of HEIs, such location, size, type, and year of establishment, were associated with NLE passing rates from 2010 to 2016. Student–faculty ratio (computed by dividing the

number of enrollees to the number of faculty) was only available during academic year 2015 to 2016, so it was only entered as an independent variable to 2016 NLE passing rate. HEIs with <10 takers and those with unrealistic student–faculty ratio (>200) were excluded in the chi-square, t test, and regression analyses. Local and state HEIs were combined during chi-square test since local HEIs had a sample size of less than five in one cell. Unstandardized regression coefficients were reported for the regression analysis section. Statistically significant results were based on $p < .05$.

Findings

NLE Takers, Passers, and Passing Rate (2010–2016)

Figure 1 shows the number of NLE takers and passers, including NLE passing rates from 2010 to 2016. While both the number of takers and passers are declining, it is interesting to note that the gap between them is decreasing. The decline in the number of takers is somewhat indicative of fewer students taking up nursing. Such decline can be attributed to the memorandum imposed by CHED on opening new nursing programs for academic year 2011 to 2012 (CHED, 2010) and the termination of low-performing HEIs in 2013 (Castañeda, 2013). While there is a decreasing number of passers through the years, the decreasing gap between passers and takers coincides with the improvement in passing rates from 2014 to 2016.

Table 1 – Profiles of HEIs (2010–2016)

	2010	2011	2012	2013	2014	2015	2016
No. of HEIs	472	483	486	487	497	490	492
Location							
NCR* (2015 population:12.88 million)	102	103	99	97	98	91	93
Luzon† (2015 population: 14.41 million)	205	208	210	211	214	216	210
Visayas (2015 population: 19.37 million)	70	71	74	75	77	74	79
Mindanao (2015 population: 24.14 million)	95	101	103	104	108	109	110
Size							
Small	263	267	272	274	280	271	270
Medium	158	164	164	162	166	167	169
Large	51	51	49	50	50	51	52
Missing	0	1	1	1	1	1	1
Type							
State	51	56	59	58	64	61	66
Local	10	11	11	11	11	11	11
Private	411	416	416	418	422	418	415
Year of establishment							
Before 1970	218	223	226	223	224	221	223
1970s	63	63	61	64	66	65	70
1980s	43	45	44	45	47	46	49
1990s	83	81	80	77	79	80	75
2000s	64	69	73	77	79	76	73
Missing	1	2	2	1	2	2	2

Data provided by CHED in October 2017.

* NCR is referred to as the National Capital Region and is part of Luzon.

† Values for Luzon exclude those from NCR. Population based on the recent Philippine census in 2015. (https://psa.gov.ph/sites/default/files/attachments/hsd/pressrelease/2015%20population%20counts%20Summary_0.xlsx).

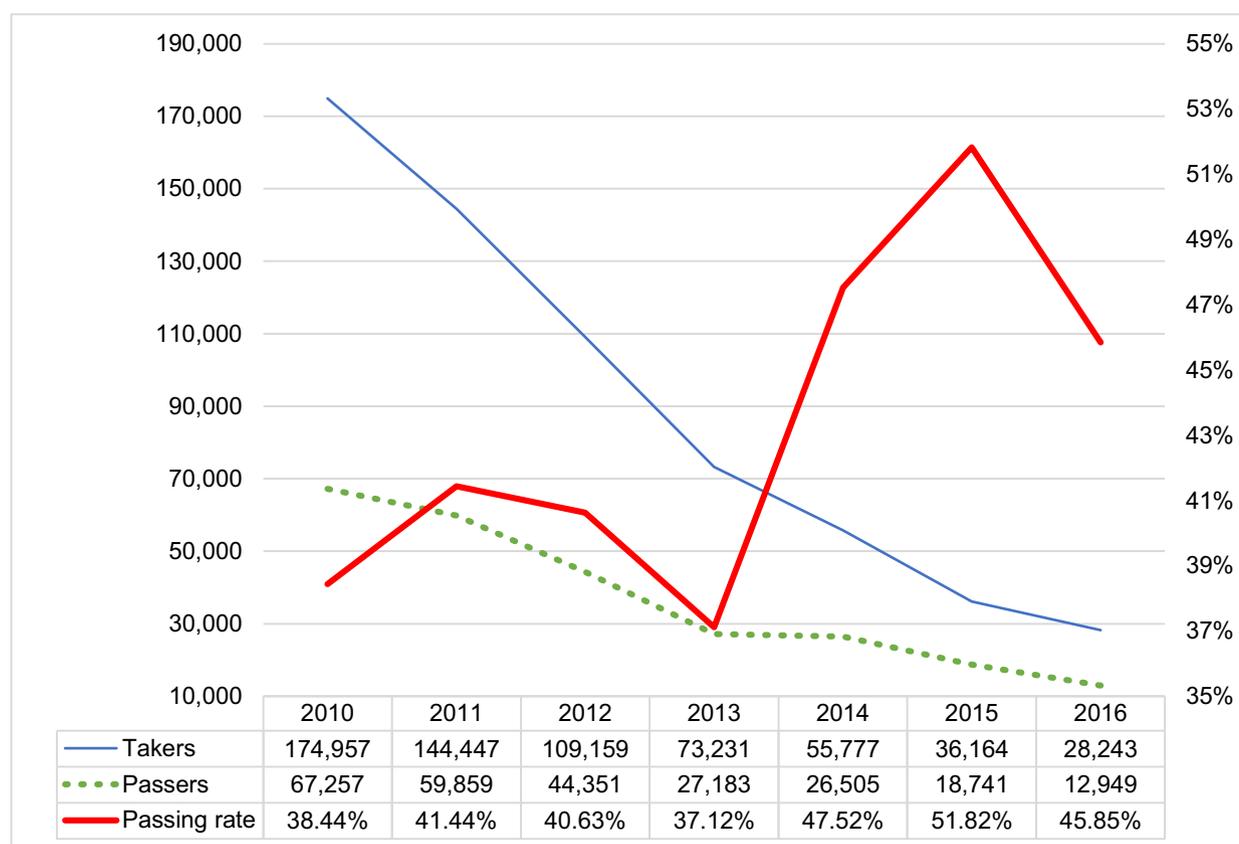


Figure 1 – NLE takers, passers, and passing rate. NLE, Nurse Licensure Examination.

Specifically, the 2014 to 2016 passing rate is at least 45%, which is an improvement from the 2010 to 2013 passing rate of <42%.

NLE Passing Rate per Location (2010–2016)

The Philippines is divided into three island regions, namely, Luzon, Visayas, and Mindanao. [Table 1](#) shows the population of these island regions. For this study, HEIs were divided into four locations by segregating HEIs located in the National Capital Region (i.e., NCR or Metro Manila) from Luzon. This is needed because NCR is the country's seat of government and education ([Vinluan, 2011](#)).

Based on [Figure 2](#), HEIs in the Visayas consistently had the highest NLE passing rate from 2010 to 2016. This finding is consistent with the study of [Rosales et al. \(2014\)](#) where most testing centers in the Visayas region had high passing rates. It is interesting to note that while HEIs in Visayas had the highest passing rate among other locations, it had the lowest number of HEIs, ranging from 70 to 79 HEIs between 2010 and 2016 ([Table 1](#)).

NLE Passing Rate per HEI Size (2010–2016)

CHED classifies HEIs based on the total number of enrollees for all degree programs. Small HEIs are those with <2,000 students, medium HEIs are those with

2,001 to 10,000 students, and large HEIs are those with >10,000 students. Based on [Figure 3](#), large HEIs had higher NLE passing rates compared to medium and small HEIs. It is noteworthy to point out that the passing rates of small HEIs were lower compared to medium and large HEIs.

NLE Passing Rate per HEI Type (2010–2016)

HEIs in the Philippines are either public (i.e., government-owned) or privately owned. Public HEIs are classified as state or local HEIs ([Villanueva, 2018](#)). Local HEIs are run by the local (city or municipal) government, while state HEIs are run by the national government. [Figure 4](#) shows that state HEIs had the highest NLE passing rates from 2010 to 2016. State HEIs are followed by local HEIs and private HEIs. It is interesting to note that private HEIs, while forming most of the HEIs in the country, tend to have lower NLE passing rates from 2010 to 2016 compared to public HEIs.

NLE Passing Rate per Year of Establishment (2010–2016)

A majority of the HEIs were established before 1970 ([Table 1](#)). Interestingly, [Figure 5](#) shows that those HEIs also had the highest passing rate compared to HEIs established from 1970 onwards. The poorest performers, on average, throughout the period were HEIs

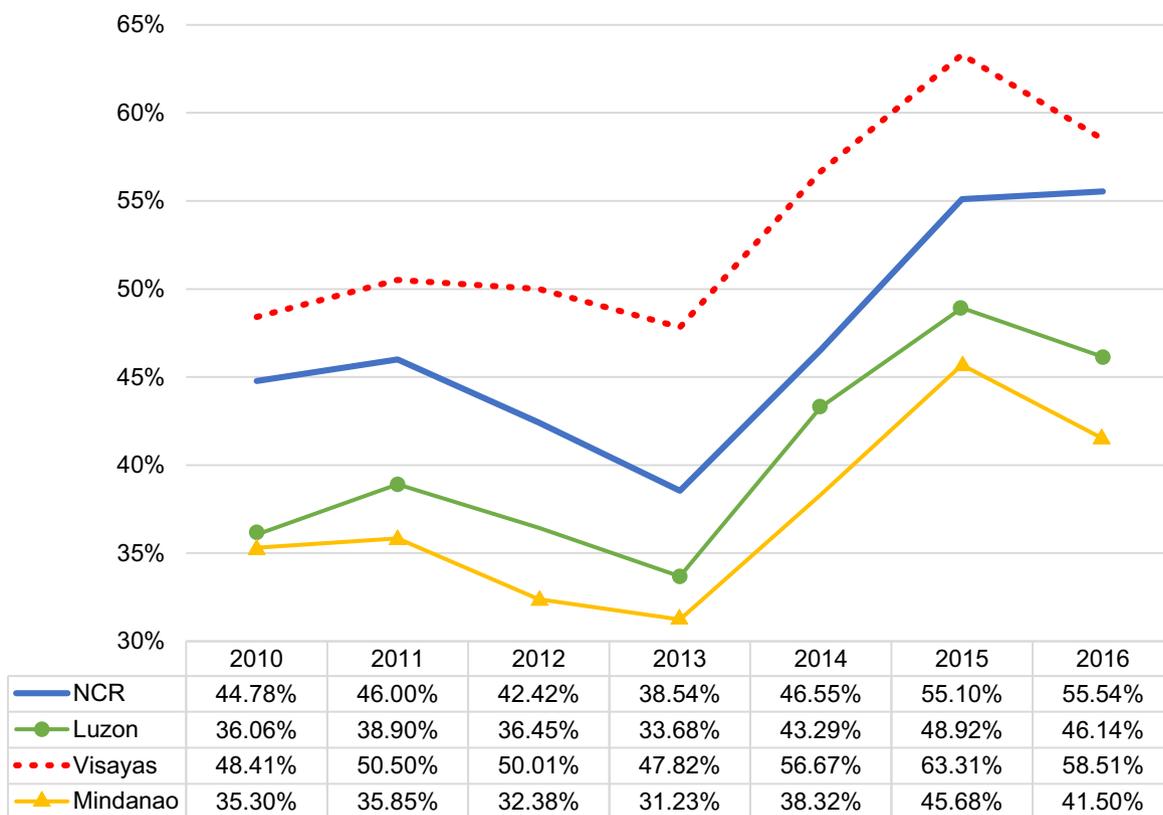


Figure 2 – NLE passing rate per location. NLE, Nurse Licensure Examination.

established in the 1990s and the 1980s. These HEIs were outperformed by those established after 2000. In 2001, CHED (2001) imposed stricter conditions on opening a nursing school, which increased the minimum requirements for the dean (i.e., must have a master’s degree in nursing and at least 5 years of teaching and supervisory experience in nursing institutes) and faculty member (i.e., must be a registered nurse, holder of master’s degree, and have at least 3 years of clinical practice). Such changes in the hiring of deans and faculty members might explain why, on average, HEIs established after 2000 performed better than those established in the 1980s and 1990s.

Comparing Low- and High-Performing HEIs

In 2009, CHED identified low-performing HEIs as those who had average NLE passing rates that were lower than the national average for the past 5 years (Ronda, 2009). In this study, we adopted the same method but using NLE ratings for the past 7 years (2010–2016). Based on the 2010 to 2016 figures, the national average NLE passing rate was 43.26%. Accordingly, 54.5% (n = 222) were low-performing HEIs, while 45.5% (n = 186) were high-performing HEIs. Table 2 compares low- and high-performing HEIs based on several HEI characteristics and NLE figures.

Results show that Visayas had the largest proportion of high-performing HEIs. However, Visayas is second to NCR among high-performing schools in terms of NLE passing rate. Moreover, high-performing HEIs were mostly large HEIs and publicly owned. Those established before 1970 had a higher proportion of high-performing HEIs. Although the proportion of high-performing schools and NLE passing rate decrease among HEIs established in the 1970s to 1990s, those established in the 2000s had a higher proportion of high-performing HEIs and better NLE passing rate. Such improvements might be attributed to higher qualifications required for deans and faculty members as mandated by the Philippine Nursing Act of 2002 (LAWPHiL, n.d.)

Regarding NLE figures, results showed that high-performing HEIs had a significantly lower number of takers and a significantly higher number of passers than low-performing HEIs. Next, 2010 to 2016 NLE passing rate of high-performing HEIs was significantly higher than low-performing HEIs. No significant difference was noted for student–faculty ratio between low- and high-performing schools.

Association of HEIs’ Characteristics with 2016 NLE Passing Rate

Table 3 shows the association of HEIs’ characteristics with NLE passing rate from 2010 to 2016. Accordingly,

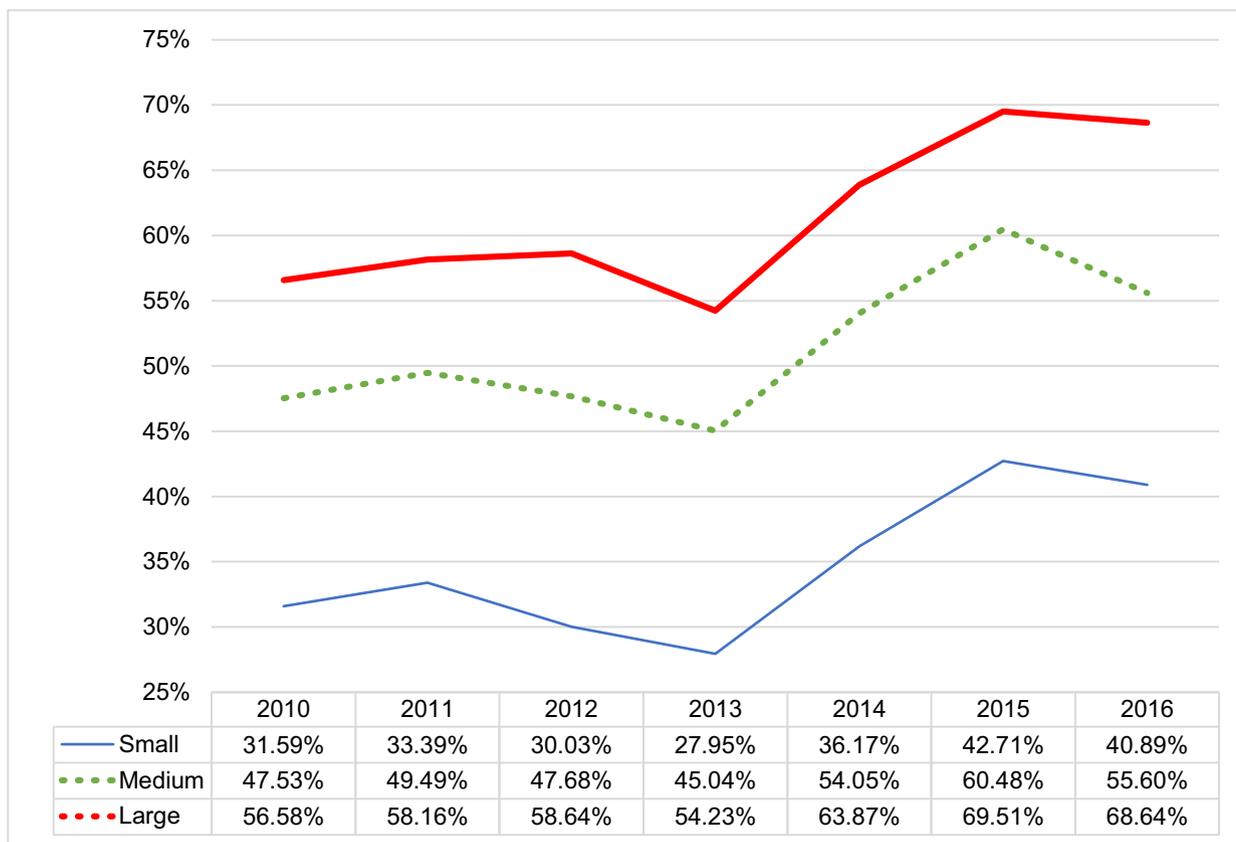


Figure 3 – NLE passing rate per HEI size. HEI, higher education institutions; NLE, Nurse Licensure Examination.

location was consistently associated with NLE passing rate. Specifically, HEIs from Luzon and Mindanao were more likely to have lower NLE passing rates than HEIs from NCR. No significant result was noted between NCR and Visayas.

Results also showed that medium and large HEIs were more likely to have higher NLE passing rates than small HEIs. Next, local and state HEIs were more likely to have higher NLE passing rates than private HEIs. However, local and private HEIs had relatively the same NLE passing rates in 2016. HEIs established in the 1980s to 2000s were more likely to have lower NLE passing rates than HEIs established before 1970.

Finally, student–faculty ratio was negatively associated with 2016 NLE passing rate. This finding suggests that HEIs with a low student–faculty ratio were more likely to have high NLE passing rate.

Discussion

While NLE passing rates have improved since 2013, the results suggest that the Philippine nursing workforce would continue to face a great shortage of nurses in the future since the number of takers and passers are on a downtrend since 2010. To date, there is already a marked shortage of nurses working in the Philippines.

Based on a 2017 report by the Department of Health (2017), there were only 90,661 nurses deployed locally and 269,761 more are required to achieve the country’s health care needs. Although employment opportunities in the Philippines are available (albeit limited), it should be noted that compensation is not commensurate to the level of expertise nurses offer (Castro-Palaganas et al., 2017; Ducanes & David, 2018). As a result, there will be fewer nurses practicing in the Philippine since the demand for nursing as a course of study stems mainly from the possibility of overseas employment where nurses can earn more than local employment (Masselink & Lee, 2010).

While there is a constant need to produce nurses for local needs, scholars suggest that the proliferation of HEIs that offer nursing programs was largely driven by the sharp expansion of international demand for nurses (Cabanda, 2017; Masselink & Lee, 2010). Unfortunately, the results show a negative aspect of such proliferation: out of 409 HEIs, over half (54.5%) were low-performing HEIs due to lower NLE passing rates for 2010 to 2016. This finding signals a need to address the wide disparities in quality. Quality, as it is measured by NLE passing rates, is also significantly associated with HEI location, size, type, year of establishment, and student–faculty ratio.

Based on the results, although high-performing HEIs in NCR had higher NLE rates in 2010 to 2016 than other

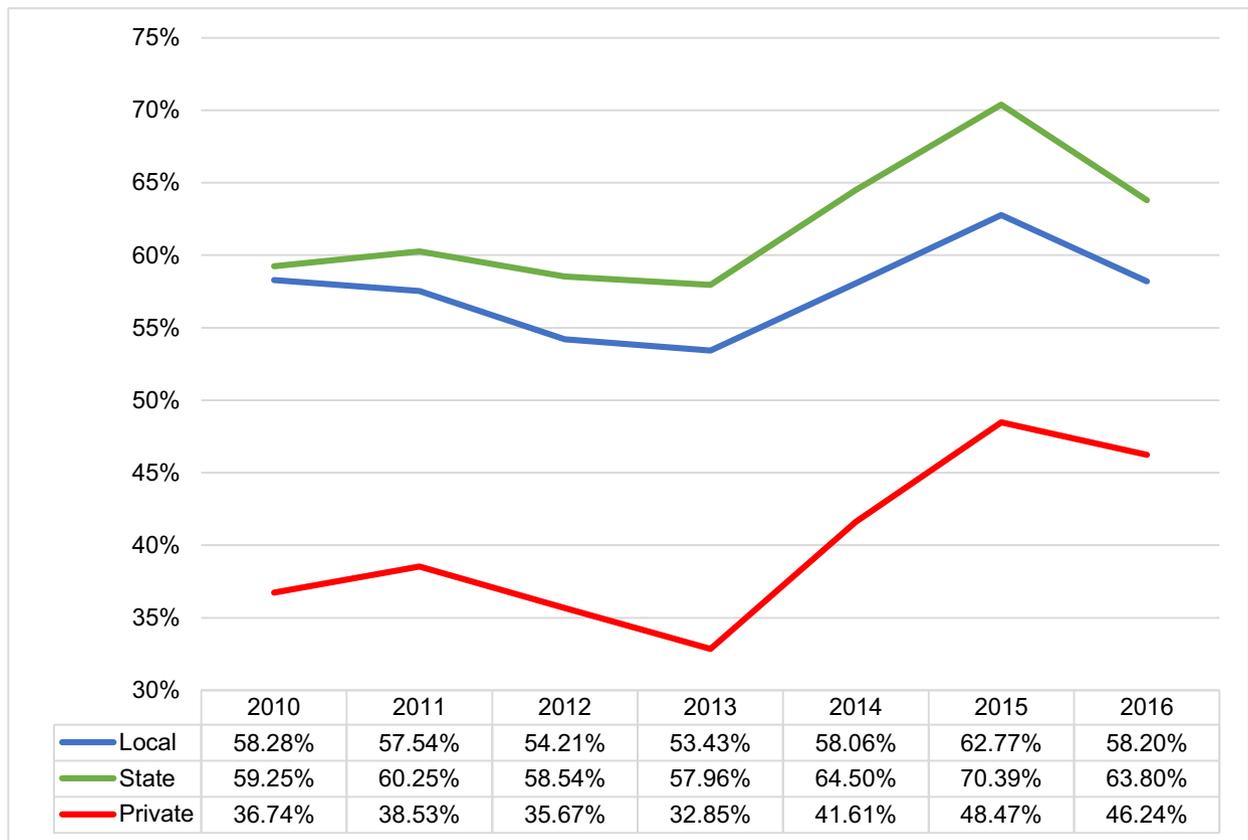


Figure 4 – NLE passing rate per HEI category. HEI, higher education institutions; NLE, Nurse Licensure Examination.

regions, HEIs from the Visayas generally outperform HEIs from other parts of the country since they had the highest proportion of high-performing HEIs in the country. Such finding is consistent with the study of [Rosales et al. \(2014\)](#) based on 2006 to 2010 NLE data. In terms of HEI type, public HEIs (local and state) tend to have high passing rates since entry to their nursing programs are generally competitive due to greater tuition fee subsidies as compared to private HEIs ([Cepeda, 2018](#)). The results also show that smaller and private HEIs, especially those that have been established recently, are more likely to have low passing rates. In contrast, medium to large and established HEIs are more likely to have higher passing rates. A potential explanation is that large and established HEIs might have more diverse faculty, more physical facilities, and more importantly, a larger pool of applicants to select from compared to small and less established HEIs. Although low- and high-performing HEIs did not differ according to student–faculty ratio, HEIs with lower ratios tend to have higher 2016 NLE passing rates compared to those with higher ratios. Such finding supports the recommendation of lowering the student–faculty ratio to improve nursing students’ learning experience and performance ([Dinç, 2015](#); [Gordon, 2017](#)).

Policy Recommendations

Clearly, there are possibly too many HEIs offering nursing programs in the Philippines. Families invest a significant amount of money to put a child through nursing school, and the onus is on the HEIs and on regulators (i.e., CHED, PRC, and BON) to ensure that this investment is returned by producing competent and qualified nursing graduates for local and international employment. The policy recommendations, based on these findings, are to improve the quality overall and reduce the number of low-performing HEIs. CHED, in coordination with PRC and BON, has attempted to address the latter by imposing a ban on starting new programs ([CHED, 2010](#)) and by closing programs that do not pass their accreditation system ([Castañeda, 2013](#)). The former, improving the overall quality of education across the nurse education system, will be a more formidable task. First, potential students can be streamed toward better performing HEIs by providing clear market signals in the form of easily accessible information on program performance, cost, and quality across HEIs. Second, CHED, PRC, and BON should provide specific guidance on improving program quality for low-performing HEIs, especially among private

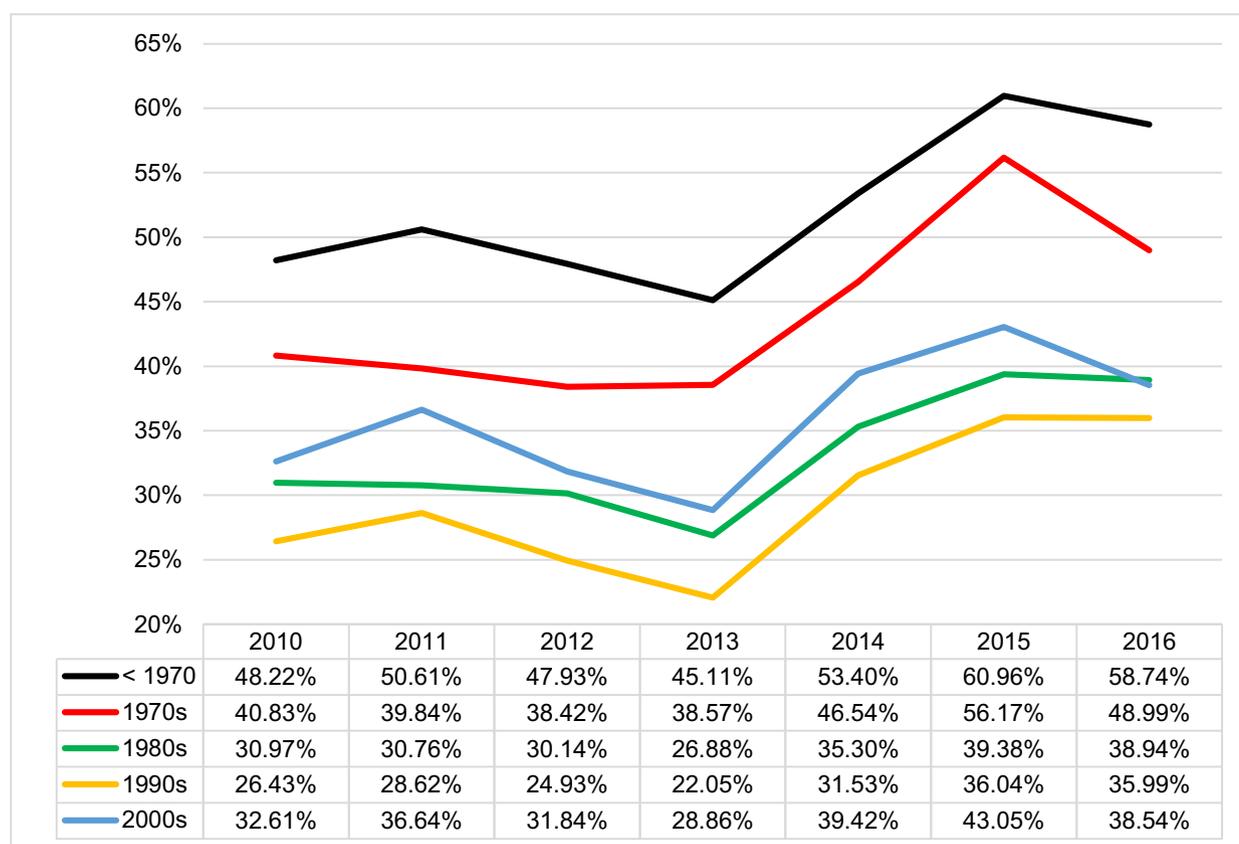


Figure 5 – NLE passing rate per year of establishment. NLE, Nurse Licensure Examination.

HEIs and those located in areas of the country where there is a shortage of nursing schools. This can be done through an incentive system that rewards improvements on an HEI's NLE performance. Any interventions to improve program outcomes and performance should prioritize areas where low-performing HEIs are concentrated, notably in Mindanao—the southernmost region of the country comprised mostly of poor and rural areas where it is challenging to hire nurses even for local needs (Department of Health, 2017).

Limitations and Conclusion

This study is one of the more recent efforts to provide an overall view of the quality of nursing schools in the Philippines based on NLE data. Aside from describing NLE trends in 2010 to 2016, the study also identified key characteristics of low- and high-performing HEIs including several predictors (i.e., location, size, type, year of establishment, and student–faculty ratio) of NLE performance. While the results were used to develop some recommendations on improving the quality of nursing programs in the Philippines, further research is needed to overcome some of the

limitations of the study and to provide a more comprehensive guide towards improving nursing programs. First, the study was only able to compute the association of student–faculty ratio to the 2016 NLE result since such data were only available for the academic year 2015 to 2016. Considering that the results show that it is a predictor of NLE performance, researchers should include such variable in future studies.

Second, the study is limited with the use of NLE passing rates as a metric of program performance. Although licensure examination passing rates are often used as a benchmark for program performance (Giddens, 2009), multiple metrics should be put together to give a full assessment. Pursuing such an assessment will require data on total program cost, graduation rates, and admissions policies. To a certain extent, the employment status and salaries of nurses that graduate from different programs are also needed. At the moment, these data are not publicly available, and some may have never been compiled. Raising the overall performance of the education system for nurses in the Philippines will require multisectoral and multiagency support, and any investments in achieving this will reap benefits for the favorable employability of Filipino nurses locally and internationally. More importantly, it would result in the overall improvement of the Philippine health care system.

Table 3 – Association of HEIs' Characteristics with 2010–2016 NLE Passing Rate

HEIs' Characteristics	2010 B	2011 B	2012 B	2013 B	2014 B	2015 B	2016 B
Location (base = NCR)							
Luzon	−11.12***	−9.40***	−9.49**	−10.48***	−8.32**	−9.77**	−11.68***
Visayas	−0.59	−0.34	2.26	1.83	3.31	2.09	0.15
Mindanao	−10.39**	−12.00***	−12.82***	−10.04**	−10.65***	−11.61***	−14.06***
Size (base = small)							
Medium	9.95***	10.57***	11.29***	10.18***	10.28***	10.04***	13.24***
Large	13.74***	14.42***	15.65***	12.80**	16.39***	14.29***	19.53***
Type (base = private HEIs)							
Local HEIs	15.61*	14.93*	18.46*	18.79*	15.87*	15.99*	11.69
State HEIs	12.95***	13.20***	14.84***	17.44***	12.50***	11.66***	10.09**
Year of establishment (base ≤1970)							
1970s	−5.37	−7.40*	−5.77	−4.96	−4.40	−4.17	−4.45
1980s	−13.18***	−15.10***	−14.20***	−12.31**	−11.50**	−15.66***	−19.91***
1990s	−14.47***	−15.06***	−15.00***	−15.76***	−13.30***	−17.33***	−14.40***
2000s	−7.77*	−8.24**	−7.65*	−7.87**	−4.87	−8.43**	−9.45**
Student–faculty ratio (M = 24.07, SD = 20.13)	–	–	–	–	–	–	−0.21***
No. of obs.	453	452	450	441	434	414	394
F	15.74***	18.77***	18.94***	19.36***	17.16***	18.98***	17.87***
R ²	28.2%	31.9%	32.2%	33.2%	30.9%	34.2%	36.0%
Adjusted R ²	26.4%	30.2%	30.5%	31.5%	29.1%	32.4%	34.0%

B, unstandardized regression coefficient; NCR, National Capital Region.

HEIs with at least 10 takers and those with <200 student–faculty ratios were included in the analysis. Student–faculty ratio only available for academic year 2015–2016 so it is only applicable as an independent variable for 2016 NLE passing rate.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Funding

This study was supported by the University of the Philippines' Center for Integrative and Development Studies (UP CIDS) through its Higher Education Policy Research Program.

Acknowledgments

The authors are grateful for the research assistance of Marco Zaplan and Raisa Aquino. We also thank the Commission on Higher Education and Professional Regulation Commission for providing data.

Supplementary materials

Supplementary material associated with this article can be found in the online version at [doi:10.1016/j.outlook.2018.12.012](https://doi.org/10.1016/j.outlook.2018.12.012).

REFERENCES

- Cabanda, E. (2017). Higher education, migration and policy design of the Philippine Nursing Act of 2002. *Higher Education Policy*, 30(4), 555–575.
- Castañeda, J. (2013). CHED orders closure of 218 nursing schools. Retrieved from <http://news.abs-cbn.com/nation/06/07/13/ched-orders-closure-218-nursing-schools>.
- Castro-Palaganas, E., Spitzer, D. L., Kabamalan, M. M. M., Sanchez, M. C., Caricativo, R., Runnels, V., ..., & Bourgeault, I. L. (2017). An examination of the causes, consequences, and policy responses to the migration of highly trained health personnel from the Philippines: The high cost of living/leaving—A mixed method study. *Human Resources for Health*, 15(1), 25.
- Cepeda, M. (2018). 8 things you need to know about the free tuition law. Retrieved from <https://www.rappler.com/nation/198314-things-to-know-free-tuition-law-irr>.
- CHED. (2001). CHED Memorandum Order No. 30, Series of 2001. Retrieved from <http://ched.gov.ph/wp-content/uploads/2017/11/CMO-No.30-s2001.pdf>.
- CHED. (2010). CHED Memorandum Order No. 32, Series of 2010. Retrieved from <http://ched.gov.ph/wp-content/uploads/2017/10/CMO-No.32-s2010.pdf>.
- Consad, H. B., & Tuquero, F. M. (n.d.). Predictors of nursing graduates' performance in licensure examination. Retrieved from https://www.researchgate.net/profile/Hermanito_Consad_li/publication/297064547_PREDICTORS_OF_NURSING_GRADUATES-3-7-16/data/56dce4db08aeb4638c0389b/PREDICTORS-OF-NURSING-GRADUATES-3-7-16.pdf.
- Department of Health. (2017). *2017 Annual Report: Status of Human Resources for Health (HRH) in the Philippines*. Santa Cruz: Department of Health.
- Dinç, L. (2015). How does nursing student internship clear up nursing problems? *Nursing Practice Today*, 1(4), 173–175.
- Ducanes, G., & David, C. D. (2018). Nurse education program performance: Evidence from licensure exams. Retrieved from <https://issuu.com/up.cids/docs/higher-edpolicybrief01-06>.
- Giddens, J. F. (2009). Changing paradigms and challenging assumptions: Redefining quality and NCLEX-RN pass rates. *Journal of Nursing Education*, 48(3), 123–124.
- Gordon, R. M. (2017). Debriefing virtual simulation using an online conferencing platform: Lessons learned. *Clinical Simulation in Nursing*, 13(12), 668–674.
- Gutierrez, N. P. (2016). Level of accreditation and board performance of the colleges of nursing in the National Capital Region. *International Education and Research Journal*, 2(5), 21–29.
- Hapal, D. K. (2017). Why our nurses are leaving. Retrieved from <https://www.rappler.com/move-ph/180918-why-nurses-leave-philippines>.
- LAWPhil (n.d.). Republic Act No. 9173. Retrieved from https://www.lawphil.net/statutes/repacts/ra2002/ra_9173_2002.html.
- Lorenzo, F. M. E., Galvez–Tan, J., Icamina, K., & Javier, L. (2007). Nurse migration from a source country perspective: Philippine country case study. *Health Services Research*, 42(3 Pt. 2), 1406–1418.
- Masselink, L. E., & Lee, S. Y. D. (2010). Nurses, Inc.: Expansion and commercialization of nursing education in the Philippines. *Social Science & Medicine*, 71(1), 166–172.
- Navarro, R. T., Vitamog, A. T., Tierra, R. J. C., & Gonzalez, D. M. J. (2011). Predictors of nursing board examination performance. *JPAIR Multidisciplinary Journal*, 6(1), 232–246.
- Ong, M., Palompon, D. R., & Bañico, L. (2012). Predictors of nurses' licensure examination performance of graduates in Cebu Normal University Philippines. *Asian Journal of Health*, 2(1), 130–141.
- Ronda, R. A. (2009). 152 nursing schools face closure for poor board performance. Retrieved from <https://www.philstar.com/headlines/2009/11/25/526266/152-nursing-schools-face-closure-poor-board-performance>.
- Rosales, A., Arugay, Y., Divinagracia, C., & Palaganas, E. (2014). Analytical study of the nurses licensure examination performance of graduates of Philippine colleges of nursing. *Philippine Journal of Nursing*, 84(1), 4–20.
- Uy, J. R. (2016). Germany needs 200,000 nurses—Baldoz. Retrieved from <https://globalnation.inquirer.net/138149/germany-needs-200000-nurses-baldoz>.
- Villanueva, R. (2018). CHED, state schools sign agreement on free tuition. Retrieved from <http://www.manilatimes.net/ched-state-schools-sign-agreement-on-free-tuition/407995/>.
- Vinluan, L. R. (2011). The use of ICT in school guidance: Attitudes and practices of guidance counselors in Metro Manila, the Philippines. *International Journal for the Advancement of Counselling*, 33(1), 22–36.