

Philippine Pharmacists Licensure Examination (PPLE) Score Indicators: A Cebu School Experience

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Abstract

This study aimed to explain the relationship of quantitative and qualitative indicators to Philippine Pharmacists Licensure Examination (PPLE) performance, identified indicators which can predict PPLE performance, and explored reasons for unsuccessful performance. A descriptive, correlational study was employed on the performance of 259 USC pharmacy graduates from 2010 - 2014. Statistical analyses were done using Pearson Correlation and Model Regression Analysis. Results revealed that Average Course Cluster GPA, Semestral GPAI-2, Semestral GPAIII-1, Male gender, USC IQ Scores, and Private Sectarian type of high school were found to have moderate positive relationship with PPLE average. These indicators were developed into a model with a predictive rate of 55.20%. The model can predict a BS graduate's performance in the PPLE. Lastly, the reasons for unsuccessful attempt as perceived by the examinees were lack of preparation and being pressured by family members despite their unpreparedness to take the PPLE that led to their failure.

Introduction

The practice of pharmacy in the Philippines is guided by R.A. 5921 which regulates the practice and sets standards of pharmaceutical education in the Philippines. It mandates that pharmacy graduates should be able to pass the Philippine Pharmacists Licensure Examination (PPLE) for eligibility to practice the profession.

The current PPLE is a pen and paper, multiple choice test with six modules on Chemistry, Biological sciences and Pharmacy. These modules are subdivided into six clusters, namely: Cluster 1 – Pharmaceutical Chemistry (Inorganic Pharmaceutical and Medicinal Chemistry; Organic Chemistry; Organic Pharmaceutical Chemistry; Qualitative Pharmaceutical Chemistry), Cluster 2 – Pharmacognosy (Plant Chemistry; Biochemistry), Cluster 3 – Practice of Pharmacy (Compounding – Dispensing; Clinical/Hospital Pharmacy; Pharmaceutical Calculations), Cluster 4 – Pharmacology - Pharmacokinetics (Toxicology; Incompatibilities and Adverse Drug Reactions), Cluster 5 – Pharmaceutics (Manufacturing Pharmacy; Pharmaceutical Dosage Forms; Physical Pharmacy; Jurisprudence and Ethics), Cluster 6 – Quality Assurance/Quality Control (Drug Testing with Instrumentation, Microbiology and Public Health) (PRC, 2014). The computation of the final rating is based on the following equivalent percentile distribution: cluster 1 (20%), cluster 2 (15%), cluster 3 (17.5%), cluster 4 (15%), cluster 5 (17.5%), cluster 6 (15%). Performance in the PPLE is categorized as passed if a graduate on the basis of one hundred per cent has obtained a general average of seventy-five per cent or over with no ratings below fifty per cent in more than two subjects.

Over the years, PPLE has gauged the competency of pharmacy graduates to practice pharmacy and has limited the participation of unsuccessful examinees in the practice of pharmacy. In Cebu City, an average of 39.71% of the pharmacy graduates passed the PPLE for the last five years. Thus, majority of the pharmacy graduates in Cebu City are barred from practicing pharmacy fully. The University of San Carlos (USC) is not spared from this attrition having 82.66% of its graduates passing the PPLE. At a national level, 56.82% of the total examinees passed in the state – run examination (PRC, 2014).

The passing percentage in the PPLE indicates the problems of quality that are faced in the professional sector of higher education. Since the licensure examination can be considered as an output indicator, it certainly confirms that a considerable number of higher – education graduates are not considered competent for the profession (Arcelo, 2003).

The outcomes of licensure examination affect students, schools of pharmacy and prospective employers. Failure in licensure examinations has emotional setbacks on the students, loss of confidence and self – esteem, to name a few (Abbott et al., 2008). Students in the undergraduate program may face great amount of frustration on their failed attempts without knowing their chances of becoming a licensed pharmacist. This happens on the premise that pharmacy educators themselves lack the data on this phenomenon. This allows unnecessary student progression in the program without due consideration of academic indicators that could have shed light on the student's options in his academic path.

There is a perceived pressure on schools to increase number of graduates to fill the demand for pharmacists in the region while there is decreasing licensure examination passing rates (Quizon, 2012). Yet, schools suffering from unsatisfactory performance have not developed a method of observing which academic indicator will best predict a graduate's success in PPLE. This adds to the reason why schools are not able to provide necessary interventions to alleviate the underperformance. Up – to – date, there have been no investigations conducted for the Visayas region. To fill in the gap and to establish data on indicators of PPLE performance in Cebu City, the study aimed to explain the relationship of the academic and non-academic indicators to PPLE performance, specifically, quantitative indicators: (semestral Grade Point Average (GPA), terminal GPA, course cluster GPA, and USC entrance examination IQ score); qualitative indicators: course cluster failures, type of school graduated (public or private), gender, and civil status and, lastly, explored reasons of unsuccessful performance as perceived by USC PPLE examinees.

This study would then provide the Department of Pharmacy and other schools of pharmacy insights on the impact of specific courses and other academic indicators on licensure examination performance. Moreover, it would assist educational administrators in the formulation of policies concerning student admission, retention and progression.

Methodology

The study was a descriptive, correlational study on the performance of USC BS Pharmacy 2006 curriculum graduates who took the Philippine Pharmacists Licensure Examination from June 2010 to June 2014. This study employed both quantitative (secondary data analysis) and qualitative (ie, interview) modes of data collection.

Ethics Review

Ethical approval for the study was obtained from the Cebu Doctors' University – Cebu Doctors' University Hospital Institutional Ethics Review Committee.

Research Procedure

The conduct of research was done by the following procedures:

- Identification and selection of graduates. A list of graduates from the USC BS Pharm 2006 curriculum was obtained from the University Office of the Registrar. Among the graduates, only those who graduated from the specified curriculum from March 2010 to March 2014 and took the PPLE were included in the study. A letter of request was sent to the University Office of Registrar for the retrieval of the list.

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- Gathering of USC Pharmacy Graduates' PPLE performance (ratings). A letter addressed to the Chairman of the Board of Pharmacy of the Professional Regulation Commission was submitted to retrieve graduates' performance for PPLE given from June 2010 to June 2014.
- Gathering of Grades and Computation of GPA. A letter of request was sent to the Office of Registrar for the retrieval of the identified graduates' grades. Semestral GPA was computed by multiplying the grade of a specific course with the corresponding units and the summation of the products was divided by the total units enrolled per semester. In this research, this was presented as Semestral GPAI-1 for the first year first semestral GPA, Semestral GPAI-2 for the first year second semester and so on. Terminal GPA was computed following the procedure for semestral GPA but on a cumulative manner, which encompasses grades from the 1st term of enrolment until the last term prior to graduation. Course cluster GPA was computed by multiplying the grade of a specific course (belonging to a cluster as set in the PPLE) with the corresponding units and the summation of the products was divided by the total units representing the specific cluster. Grades (pass or fail) on repeat courses belonging to a particular cluster were included in the computation of GPAs.
- Gathering of Other Academic indicators. A letter of request was made for the University Office of the Registrar to obtain student information on type of school graduated (private or public) for the graduates concerned, gender and civil status. USC entrance examination Intelligence Quotient (IQ) scores were archived and provided by USC- IRM office.
- Conduct of Interview with Unsuccessful USC PPLE Examinees-Unsuccessful USC PPLE examinees were communicated through phone interview, social networking (Facebook®), and e – mail. Guided interview questionnaire was used to assess examinees' perceived causes of underperformance and recommendations.

Questionnaires included questions and topics such as: performance as a student, preparation made for PPLE, perceived quality of learning gained, perceived causes of failure, perceived congruency of USC teaching to PPLE and other personal conditions prior and during the examination.

Data Collation

Graduates qualifying the set inclusion criteria for this study were made an individual Microsoft® Excel file for the computation of course cluster GPA. A summarized Microsoft® Excel file was made containing all the qualitative and quantitative parameters grouped according to the season when they took the PPLE.

Research Statistics

Correlational statistics was applied to the identified predictors to establish its correlation to the graduates' performance in the PPLE. Bivariate correlation of identified indicators was estimated using Pearson correlation coefficient.

Multiple regression analysis was used to determine if PPLE performance is associated with the indicators. All statistical analyses were performed using SPSS (Statistical Packages for Social Sciences) v.22. Statistical significance was evaluated at 0.05 level.

Correlation of course clusters scores and performance in college (GPAs) was statistically evaluated.

Results and Discussions

A total of 259 records of USC BS Pharmacy graduates starting from 2010 – 2014 were reviewed. Majority were female (83.78%), single (99.61%), have graduated from private – sectarian type of high school (43.63%). In terms of the academic performance, majority (53.28%) did not have any course cluster failures.

Table 1 presents the quantitative indicators of the graduates. In terms of the Semestral GPAs, Semestral GPAIV – I and Semestral GPAI – 2 garnered the highest performances among the eight semesters with 85.27% and 85.21%, respectively. On the contrary, GPAIII – 1 had the lowest

performance with 81.31%. The average terminal GPA of the graduates was recorded at 84.37%. In terms of the course cluster GPA, Course Cluster 1 GPA had the highest percentage with 84.10% while Course Cluster 2 GPA (81.73%) showed the lowest percentage among the six course clusters. Lastly for the USC Entrance Examination IQ Scores, majority of the graduates had an average IQ (73.75%). Table 2 presents the means of the indicators included in the study with their corresponding mean and standard deviations. The average PPLE rating for USC Pharmacy students is $79.34\% \pm 5.55$. The mean terminal GPA is $84.52\% + 3.63$ and the average course cluster GPA is $82.06\% \pm 4.52$. Lastly, the mean USC Entrance Examination IQ Score is 99.73 ± 12.72 .

Table 3 shows the correlation of indicators with PPLE average. It reveals that Semestral and Terminal GPA, Course Cluster GPA, USC Entrance Examination IQ Scores, Number of Units Failed, Gender, and type of high school attended showed significant correlation with PPLE average as indicated by their P – value. However, USC Entrance Examination IQ scores, Male Gender, and Type of high school attended showed weak to very weak relationship while the rest of the indicators showed moderate to strong correlation with PPLE Average.

Based on Model 6 in Table 4, only average course cluster GPA, Semestral GPAI-2, Semestral GPAIII-1, USC Entrance Examination IQ Scores, Male Gender and private sectarian type of high school have significant effect on PPLE average of the respondents since their p – values are less than 0.05. Thus, using the indicators of Model 6, predicted PPLE average can be represented by the following regression model below using the Stepwise Regression Method to select the variables that have significant contribution to the model:

$$\text{Predicted PPLE Performance} = [(-0.174) + (0.837 * \text{Average Course Cluster GPA}) + (0.289 * \text{Semestral GPAI-2}) + (-0.235 * \text{Semestral GPAIII-1}) + (0.054 * \text{USC Entrance Examination IQ Score}) + (1.450 * \text{Male}) + (-1.061 * \text{Private Sectarian})]$$

Reflected in Table 5 are the values of the Coefficient of Multiple Determination or R². This determines the fitness of the model for the PPLE performance of the respondents as determined by their Average Course Cluster GPA, Semestral GPAI-2, Semestral GPAIII-1, USC Entrance Examination IQ Score, Male Gender and Private Sectarian Type of High School. It is shown that the R² value is 55.20%, this means that those six abovementioned variables can predict 55.20% of their PPLE average rating.

According to Model 6, for every one unit increase in the Average Course Cluster GPA of the respondents, his or her performance is increased by an average of 0.837, holding Semestral GPAI-2, Semestral GPAIII-1, USC Entrance Examination IQ Score, Male Gender and Private Sectarian Type of High School constant. Identically, for every one unit increase in Semestral GPAI-2, there is an equivalent increase of 0.289 in performance while with Semestral GPAIII-1, a unit increase is equivalent to 0.235 decrease with other indicators being held constant. Similarly for USC Entrance Examination IQ Score, there is a one unit increase in performance for every 0.054 increase in Average Course Cluster GPA, respectively with the other indicators held constant. Male Gender confers a male examinee an automatic performance increment of 1.450. Conversely, for Private Sectarian Type of High School, there is 1.061 decrease in PPLE performance if the examinee comes from a private sectarian high school.

Table 6 reveals the responses of the unsuccessful PPLE examinees of USC. In terms of the perceived causes of failure, 90.91% of the unsuccessful examinees claimed that they did not have enough preparation for the PPLE that lead to their unsuccessful attempt. Moreover, 45.45% declared that they encountered difficulty in answering the PPLE questions. Other reasons mentioned were minor incongruent in USC Pharmacy teaching and PPLE such as topics not covered by lectures, non- PPLE simulating undergraduate examinations, and faculty members perceived to be not encouraging.

The present study probed the academic and non – academic indicators as predictors of performance in the PPLE. At the forefront, these indicators will be relevant for student selection criteria or for formulating programs with an incorporation of these elements vis-à-vis a high-rate of PPLE results. Furthermore, the correlations which were proven to have significant relationships will aid in identifying underperforming students (currently in the program) who are at risk of failing the PPLE.

Majority of the indicators showed strong positive relationship with PPLE average rating. However, further analysis of these indicators using multiple regression revealed that not all are significant predictor of PPLE performance. Among the indicators, GPAs were found to be strong predictors of PPLE

performance, specifically, Average Course Cluster GPA, Semestral GPAI-2, and Semestral GPAAIII-1 as identified by the stepwise regression model. Moreover, Male Gender, USC Entrance Examination IQ Scores and Private Sectarian type of high school were also found to contribute in PPLE performance. The model was shown to be able to predict PPLE average in 55.20% of the respondents.

Semestral GPAI-2 is strongly correlated with PPLE Average. This indicates that there is a significant contribution in the PPLE performance of the graduates in relation to his or her performance during the first year – second semester. Similarly, Semestral GPAAIII-1 is moderately correlated with PPLE average as this semester is composed of 21.73% (5 out of 23 subjects) of the total professional subjects included in the PPLE. Average course cluster GPA was the strongest indicator among the six indicators based on the stepwise regression model since it was shown to predict PPLE average in 47.8% of the respondents making it the main predictor for PPLE average. Average course cluster GPA reflects a simulation of the PPLE since grades used in its computation are reflective to that of the subjects included in the PPLE. With the inclusion of other indicators, it is noted that the 47.8% prediction rate will increase by 2.5% with Semestral GPAI-2; 4.2% with Semestral GPAI-2 and Semestral GPAAIII-1; 5.5% with Semestral GPAI-2, Semestral GPAAIII-1 and Male Gender; 6.5% with Semestral GPAI-2, Semestral GPAAIII-1, Male Gender and USC Entrance Examination IQ Scores; lastly, 7.4% increase will be observed with Semestral GPAI-2, Semestral GPAAIII-1, Male Gender, USC Entrance Examination IQ Scores, and Private Sectarian Type of High School.

The results of the present study have a strong link to indicator frameworks advanced by several performance researchers. On one hand, academic subjects and the quality of knowledge amassed from parallel courses (with PPLE) offered in a pharmacy program are considered the factors which afford a student-examinee a greater advantage. On the other hand, as in several published works, GPAs were identified as strong predictors of performance in licensure examinations. This had been well supported by the studies of (Besinque et al. 2000; Grossbach et al. 2011; Ong et al. 2012; Arcega et al., 2014; and Allen et al. 2013). Grades (GPAs) have a clear academic importance; but on a greater scale, grades reflect one of the core objectives of pharmacy education: acquiring knowledge (Kuncel et al., 2005).

Four years of pharmacy education provides students with specific set of competencies acquired from the various courses in their undergraduate degree. Students who have successfully acquired the competencies are ideally prepared for the PPLE since PPLE is a competency – based exam, thus academic progression in their undergraduate is a strong determinant in their PPLE attempt. Lastly, according to a study by Truman in 2012, performance in the undergraduate professional courses is a strong predictor of licensure examination performance (Truman, 2014).

IQ scores, which are used as one of the pre-admission criteria, were also identified as predictors of performance in licensure examination but to a weaker extent. This indicator is significantly seen to have a correlation with licensure performance of various schools in the Philippines (Ong et al. 2012; Arcega et al., 2014). IQ is a weaker indicator since some students with high IQ do not necessarily perform well in PPLE and vice versa. This finding is in contrast with the works of (McCall et al. 2007; and Kuncel et al. 2005) as these studies uphold that the use of pre-admission program like the Pharmacy College Admission Test (PCAT) of the United States, proved to be the strongest predictor of success and failure in the licensure examination.

IQ scores being considered for a student to be admitted to a pharmacy school envisions to select students to become future pharmacists but lacks the congruency of IQ examination content with PPLE questions hence, a weak predictor of PPLE. Furthermore, despite IQ showed some degree of correlation with performance in PPLE, it shouldn't be the sole basis for admission of students. A student's IQ—a single, numerical value—has been used to determine a student's cognitive ability and to predict a student's school performance; a determination that may result in a possible inflated or deflated idea of self-worth. However, educational and psychological research has indicated that IQ as a singular determining factor of a student's ability or inability to succeed in life may be an over simplification (Combs, 2004).

Table 1: Quantitative Indicators

Indicators	Batch 2010	Batch 2011	Batch 2012	Batch 2013	Batch 2014	Total
Semestral GPA						
Semestral GPAI – 1	86.81%	84.22%	84.94%	82.57%	84.11%	84.53%
Semestral GPAI – 2	87.16%	85.89%	86.20%	83.01%	83.77%	85.21%
Semestral GPAII – 1	85.68%	84.83%	84.52%	84.66%	83.95%	84.73%
Semestral GPAII – 2	85.49%	84.06%	84.82%	82.38%	84.57%	84.26%
Semestral GPAIII – 1	82.73%	79.83%	82.34%	78.12%	83.53%	81.31%
Semestral GPAIII – 2	84.16%	83.42%	85.10%	81.60%	83.55%	83.57%
Semestral GPAIV – 1	86.19%	85.75%	86.20%	82.00%	86.22%	85.27%
Semestral GPAIV – 2	86.16%	85.55%	81.60%	83.78%	85.95%	84.61%
Terminal GPA	85.86%	84.61%	85.24%	80.50%	85.62%	84.37%
Course Cluster GPA						
Course Cluster 1 GPA	85.11%	83.94%	84.4%	82.05%	85%	84.10%
Course Cluster 2 GPA	80.59%	80.76%	82.26%	80.58%	84.44%	81.73%
Course Cluster 3 GPA	84.16%	83.41%	84.66%	80.71%	82.38%	83.06%
Course Cluster 4 GPA	81.92%	82.12%	82.48%	81.87%	83.87%	82.45%
Course Cluster 5 GPA	83.43%	81.65%	83.04%	80.16%	82.82%	82.22%
Course Cluster 6 GPA	83.51%	81.43%	82.92%	81.22%	83.58%	82.53%
Course Cluster Average	83.25%	82.30%	83.37%	81.11%	83.70%	82.75%
USC Entrance Examination IQ Scores						
Low IQ (<71)	0	0	0	1(1.3%)	0	1 (0.39%)
Below Average IQ (72 – 87)	5 (13.51%)	7 (14.29%)	5 (10%)	8 (10.39%)	1 (2.22%)	26 (10.03%)
Average IQ (88 – 111)	25 (67.57%)	34 (69.39%)	33 (66%)	59 (75.32%)	40 (88.89%)	191 (73.75%)
Above Average IQ (112 – 127)	7 (18.92%)	8 (16.33%)	12 (24%)	10 (12.99%)	4 (8.89%)	41 (15.83%)
Superior IQ (>127)	0	0	0	0	0	0

Table 2: Means of the indicators

Indicators	Mean	Std. Deviation
PPL Average	79.3479	5.55318
Semestral GPAI-1	85.972	4.1543
Semestral GPAI-2	85.212	4.2088
Semestral GPAII-1	85.203	4.1894
Semestral GPA II-2	83.995	4.4789
Semestral GPAIII-1	80.613	5.9572
Semestral GPAIII-2	83.111	4.5610
Semestral GPAIV-1	84.728	4.5435
Semestral GPAIV-2	85.217	4.2540
Terminal GPA	84.521	3.6312
Number of units failed	6.000	8.9887
Course Cluster GPA 1	83.406	4.6807
Course Cluster GPA 2	81.115	5.3438
Course Cluster GPA 3	82.175	4.6245
Course Cluster GPA 4	82.074	4.8471
Course Cluster GPA 5	81.447	5.4253
Course Cluster GPA 6	81.816	5.2364
Average Course Cluster GPA	82.0565	4.51967
USC Entrance Examination IQ Score	99.725	12.7189

Table 3: Pearson Correlation of Indicators with PPLE Average

Indicators	P – value	Interpretation	R – coefficient	Interpretation
Semestral GPAI-1	0.000	Significant	0.593	Moderate positive relationship
Semestral GPAI-2	0.000	Significant	0.647	Strong positive relationship
Semestral GPAII-1	0.000	Significant	0.575	Moderate positive relationship
Semestral GPA II-2	0.000	Significant	0.569	Moderate positive relationship
Semestral GPAIII-1	0.000	Significant	0.530	Moderate positive relationship
Semestral GPAIII-2	0.000	Significant	0.606	Strong positive relationship
Semestral GPAIV-1	0.000	Significant	0.603	Strong positive relationship
Semestral GPAIV-2	0.000	Significant	0.602	Strong positive relationship
Terminal GPA	0.000	Significant	0.685	Strong positive relationship
Course Cluster GPA 1	0.000	Significant	0.631	Strong positive relationship
Course Cluster GPA 2	0.000	Significant	0.589	Moderate positive relationship
Course Cluster GPA 3	0.000	Significant	0.648	Strong positive relationship
Course Cluster GPA 4	0.000	Significant	0.562	Moderate positive relationship
Course Cluster GPA 5	0.000	Significant	0.632	Strong positive relationship
Course Cluster GPA 6	0.000	Significant	0.670	Strong positive relationship
Average Cluster GPA	0.000	Significant	0.692	Strong positive relationship
USC Entrance Examination IQ Score	0.000	Significant	0.398	Weak positive relationship
Number of Units Failed	0.000	Significant	-0.512	Moderate negative relationship
Male	0.000	Significant	0.130	Very weak positive relationship
Public	0.000	Significant	0.028	Very weak positive relationship
Private Sectarian	0.000	Significant	-.108	Very weak negative relationship

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
6	(Constant)	-.174	5.370		-.032	.974
	Average Course Cluster GPA	.837	.143	.682	5.841	.000
	Semestral GPAI-2	.289	.103	.219	2.811	.005
	Semestral GPAIII-1	-.235	.087	-.253	-2.696	.008
	Male	1.450	.678	.100	2.140	.034
	USC Entrance Examination IQ Score	.054	.022	.124	2.410	.017
	Private Sectarian	-1.061	.521	-0.95	-2.036	.043

Dependent variable: PPLE Average

Table 5: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
6	0.743 ^a	0.552	0.539	3.77086

^aPredictors: (Constant), Average Course Cluster GPA, Semestral GPAI-2, Semestral GPAIII-1, Male, USC Entrance Examination IQ score, Private Sectarian

Table 6: Reasons for Unsuccessful PPLE Performance

	Specific Responses	Percentage
Difficulties encountered before and during the PPLE	Difficult exam questions	45.45%
	Physical uneasiness	18.18%
	Anxiety	27.27%
	Depressed due to unexpected experiences	9.09%
Perceived causes of failure	Lacks preparation	90.91%
	Being pressured by family members to take PPLE despite unpreparedness	18.18%
Congruency of USC Pharmacy teaching and PPLE	I felt that they were related	100%
	I felt that they were not related	0%
	Some topics were not covered	45.45%
	Faculty members not encouraging underperforming students	9.09%
	Non - PPLE simulating undergraduate examinations	9.09%

Failing is a devastating setback that can result in loss of self – esteem and confidence (Abbott et al., 2012). Pharmacy graduates face great amount of frustration on their failed attempts in the PPLE. One respondent declared, “I feel ashamed when I failed in the board exam (PPLE) since people around me have high expectation on me being a Carolinian graduate.” Lack of preparation for the PPLE and family members pressuring them to take the PPLE were seen as reasons for the unsuccessful attempt. Notably, 93.33% of the unsuccessful examinees had course cluster failures during their undergraduate and failed in their first PPLE attempt. Similar observation was seen by Madden and his colleagues, in which students who had failure during their academic life failed in the NAPLEX. Repeat of a course does not guarantee that the students have a complete grasp of the desired educational outcome and hence, preparedness for PPLE (Madden et al., 2012). Attending review classes, provision of mock board examinations (PPLE simulation examinations), and in – house reviews were perceived by the unsuccessful examinees as additional means of preparation for a successful PPLE attempt.

This study presents the foremost findings on the perceived causes of failure in the PPLE and establishes useful recommendations for future examinees and schools of Pharmacy. However there were limitations seen in the study such as the low participation of the unsuccessful examinees (37%) in the conduct of interview, variations in faculty profile across batches, and the inclusion of only few data on students’ pre – admission variables.

Conclusion

This study determined significant predictors of performance in the PPLE from among the academic and non-academic indicators. Average Course Cluster GPA, Semestral GPAI-2, Semestral GPAIII-1, Male gender, USC Entrance Examination IQ Scores, and Private Sectarian type of high school were found to have moderate positive relationship with PPLE average. These indicators were developed into a model with a predictive rate of 55.20%. The reasons for unsuccessful attempt as perceived by the examinees were lack of preparation and being pressured by family members despite their unpreparedness to take the PPLE that led to their failure.

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References

- Abbott A, Schwarts M, Hercinger M, Miller C and Foyt M. Predictors of success on national council licensure examination for registered nurses for accelerated baccalaureate nursing graduate. Nurse educator 2008; 33: 5–6.
- Allen R and Diaz C. Use of preadmission criteria and performance in the doctor of pharmacy program to predict success on the North American

- pharmacists licensure examination. *Amer J Pharm Educ.* 2013; 77: 1-6.
- Arcega AEA, Briones LEDC, Corteza ZDP, De Guzman MRK, Magno JML, Sy SC *et al.* The relationship of pharmacy licensure examination scores with the University of Santo Tomas entrance test, IQ score, course preference and general weighted average grade of pharmacy students of the University of Santo Tomas of Batches 2010 – 2013. *Malaysian J. Pharm.* 2014;1:106.
- Arcega A. In pursuit of continuing quality in higher education through accreditation: the Philippine experience. International Institute for Educational Planning. 2003. Available from: <http://www.unesco.org/iiep/PDF/pubs/philippines.pdf>. (Accessed on 29 September 2014).
- Besinque K, Wong W, Louie S and Rho J. Predictors of success rate in the California state board of pharmacy licensure examination. *Amer J Pharm Educ* 2000; 64: 50 - 53.
- Combs D. Predicting licensing examination performance with cognitive style and reactive behavior pattern assessment. University of Central Florida, Orlando, Florida. 2004. Available from: http://etd.fcla.edu/CF/CFE0000036/Combs_Daniel_P_200405_PhD.pdf. (Accessed on 29 September 2014).
- Grossbach A and Kuncel N. The predictive validity of nursing admission measures for performance on the national council licensure examination: a meta – analysis. *J Prof Nursing* 2011; 27: 124 – 127.
- Kuncel N, Crede M, Thomas L, Klieger D, Seiler S and Woo S. A Meta-Analysis of the validity of the pharmacy college admission test (PCAT) and grade predictors of pharmacy student performance. *Amer J Pharm Educ* 2005; 69: 339 – 347.
- Madden MM, Etzler FM, Schweigner T and Bell HS. The impact of pharmacy students' remediation status on NAPLEX first – time pass rates. *Amer J Pharm Educ* 2012; 76: 1-3.
- McCall KL, MacLaughlin EJ, Fike DS and Ruiz B. Preadmission predictors of PharmD Graduates' performance on the NAPLEX. *Amer J Pharm Educ.* 2007; 71: 5.
- Ong M, Palompon D and Banico L. Predictors of nurses licensure examination performance of graduates in Cebu Normal University, Philippines. *Asian J Health* 2012; 2: 130 – 141.
- Professional Regulations Commission. 2014. Available from: <http://www.prc.gov.ph>. (Accessed on 29 September 2014).
- Quizon PM. Perspectives on a return service agreement program for pharmacy students. *Int J Pharm Teach Pract* 2012; 3: 237 – 239.
- Truman J. Identifying predictors of national council licensure examination for registered nurses (NCLEX-RN) success in an associate degree in nursing program. *Int J Appl Sci Tech* 2012; 2: 37– 44.