Impact and Effectiveness of Diverse Admissions Tools and Processes on Academic Outcomes in Cagayan State University-College of Medicine: A Comprehensive Analysis (2016-2018)

Noelyn O. Bernal

Cagayan State University

noelynbernal@csu.edu.h

https://orcid.org/0009-0001-2566-3076

HOW TO CITE:

Noelyn O. Bernal (2026). Impact and Effectiveness of Diverse Admissions Tools and Processes on Academic Outcomes in Cagayan State University-College of Medicine: A Comprehensive Analysis (2016-2018). International Journal of Special Education, 41(8s), 310-322

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.

Open access publication underthe terms and conditions of the Creative CommonsAttribution

ABSTRACT:

This study investigates the influence and efficacy of various admissions strategies and processes on academic performance at Cagayan State University-College of Medicine (CSU-COM) between 2016 and 2018. The goal is to determine if the different admissions criteria and profile traits help or hinder the selection process. The study aims to identify key factors influencing academic performance by conducting a thorough analysis of predictor variables such as personal attributes, admission criteria, pre-medical profiles, and familial profiles, as well as their correlation with outcome variables such as year-level general weighted average (GWA), Revalida scores, and duration of stay in the College of Medicine (COM). The findings show that college entrance exam (CAT) scores are the strongest predictor, accounting for substantial differences in first-year GWA, final GWA, Revalida scores, and duration of stay. Scholarship status has a favorable impact on academic progress, emphasizing the necessity of financial support. NMAT scores, while less important than CAT scores, nonetheless have a substantial correlation with improved academic success. Furthermore, undergraduate GWA and the relevance of pre-medical courses are major predictors of success, demonstrating the importance of earlier academic accomplishments and pre-medical training. Civil status, particularly marriage, is also associated to improved academic performance. The data indicate that a comprehensive admissions method that includes CAT scores, scholarships, NMAT scores, undergraduate GWA, and suitable pre-medical education leads to a more accurate selection procedure. Recommendations include retaining the CAT as the major admissions instrument, expanding financial choices, and strengthening pre-medical advising to assist prospective students in selecting appropriate courses. This detailed approach can help identify well-rounded individuals who are likely to succeed in medical school.

(CC BY) license (http://creativecommons.org/licenses/by/4.0/).

Keywords: Admissions criteria, Academic performance, College admission test (CAT), Medical school, Predictive analysis.

INTRODUCTION

The Philippines has a high demand for excellent healthcare, making identifying indicators of academic performance among medical students critical for educational institutions and the healthcare industry. This study focuses on finding these factors among Filipino medical students at Cagayan State University - College of Medicine (CSU-COM) between 2016 and 2018. CSU-COM, founded in 1993, is known for producing competent physicians but struggles with student retention and graduation rates. This study will examine multiple admission factors, such as undergraduate performance, National Medical Admission Test (NMAT) scores, College Admission Test (CAT) scores, and interview scores, to better understand their link to academic achievement. The goal is to provide insights that can improve the selection process and enhance the quality of medical graduates, ultimately strengthening the healthcare system in the Philippines.

CSU-COM, the region's first College of Medicine, was founded alongside the Cagayan Valley Regional Hospital (now Cagayan Valley Medical Center) as its training facility. The college has continuously scored well on the Physicians' Licensure Examination (PLE), earning prominent rankings among medical institutions in the Philippines. Admission to CSU-COM is tough, with a Bachelor of Science (BS) or Bachelor of Arts (BA) degree, ideally in Biology, Nursing, Medical Technology, Pharmacy, Public Health, or Physical Therapy, as well as coursework in Chemistry, Biological Sciences, Mathematics, and Physics. Applicants must have a minimum general weighted average of 2.0 (85%) and an NMAT score in the 40th percentile. Additional assessments evaluate intellectual, psychological, moral, and physical competencies, with selection criteria including NMAT score, undergraduate GPA, interview performance, honors/awards, residency in a 5th class municipality or indigenous community membership, entrance test results, and being a CSU graduate from region 2.

Personal profile characteristics including age, gender, civil status, participation in an ethnic or cultural minority group, and living conditions all have a substantial influence on academic success. Younger students frequently thrive early on owing to recent academic preparation, but older students gain from emotional maturity and life experience. Female students typically outperform males in academic and therapeutic contexts (Ferguson et al., 2002; Hojat et al., 2002). Civil status influences time management and stress levels, with married students having distinct obstacles and advantages (Stratton et al., 2005; O'Connor et al., 2012). Ethnic or cultural minority students may suffer prejudice and cultural disparities, but supportive settings and strong peer networks can help to reduce these impacts (Cheng et al., 2017; Smith et al., 2014). Living conditions also play a crucial role; students living with parents benefit from stability and support, while those living independently may develop autonomy and social integration but encounter higher stress levels (Gubbels et al., 2016).

The predictive value of national medical admission tests (such as the NMAT in the Philippines) on academic performance in medical studies has been extensively researched, with moderate to strong correlations found between early medical school performance and success on licensing exams (Julian, 2005; McManus et al., 2013; Groves et al., 2007). Undergraduate general weighted average (GWA) is a strong predictor of academic achievement, especially throughout the preclinical and clinical years (Wilkinson et al., 2008; Mitchell et al., 2013). Scholarships improve academic performance by lowering financial stress while increasing motivation and well-being

(DesJardins et al., 2002; Singh et al., 2013). Interview scores, especially from structured formats like MMIs, effectively predict academic and non-academic performance in medical studies, capturing essential non-cognitive skills and professionalism (Eva et al., 2004; Reiter et al., 2007; Lemay et al., 2007; Powis et al., 2013).

The undergraduate course type, institution, and location all have a substantial impact on academic achievement in medical study. Students with pre-medical, scientific, and health backgrounds typically thrive owing to their core knowledge and experience (Ferguson et al., 2003; Hafferty et al., 2009). The geographical location of undergraduate schools has an influence on resource availability, clinical exposure, and support networks (Rabinowitz et al., 2008; Cooke et al., 2018). Taking a gap year before medical school has both favorable and negative consequences (Crowe et al., 2018; Malau-Aduli et al., 2019).

Family characteristics such as a student's geographic location, parental educational achievement, family economic position, and living conditions all have a substantial impact on academic success. These variables influence access to educational resources, healthcare, financial stability, enhanced learning settings, and social capital (Jegede et al., 2020).

Objectives of the Study

The objective of this research is to look at the impact of various admissions tools and processes on medical school results, as well as to determine whether the numerous admissions criteria and profile characteristics used in medical school admissions are a strength or weakness in the selection process. It aims to investigate the existence of a significant association between predictor variables (personal, admission criteria, pre-med profile, and familial profile variables) and outcome variables (year level GWA, Revalida score, and years in COM).

MATERIALS AND METHODS

Research Design

This quantitative study used a descriptive and analytical study design, with a correlational approach, to look into the relationship between various admissions criteria and profile variables (predictor variables) and academic performance parameters such as General Weighted Average (GWA) per year level, Revalida scores, and the length of time required to complete medical school (outcome variables). Data were obtained from student records at the college, including biographical profiles, entrance profiles, academic grades, and years from admission to graduation. All data were kept strictly secret and examined statistically.

Sampling Technique

This study used total enumeration and focused on students accepted to Cagayan State University-College of Medicine from 2016 to 2018, with the majority graduating between 2020 and 2022. The inclusion criterion centered on Filipino students admitted within the stated school years. Exclusion criteria excluded international students, those accepted outside of the required time frames, and those who left out or did not take the final comprehensive (Revalida) test. Furthermore, interview scores were removed due to a large amount of missing data in two batches.

Locale of the study

The study was conducted at Cagayan State University College of Medicine (CSU-COM) in the Philippines.

Research Instruments

A document review was used to collect information on academic performance factors. The study concentrated on students' personal characteristics, entrance profiles, academic grades, and the time from admission to graduation. Limitations included a lack of data on the causes of student problems, dropouts, withdrawals, dismissals, leaves of absence, and low grades.

Data Gathering Procedure

Data were acquired from the College of Medicine's administration and registrar. Following recovery, the data were examined, verified, and kept secret. The data were organized and encoded in an Excel file for further examination.

Analysis of the Data/ Statistical treatment

The graduates' profiles and academic achievement were examined using descriptive statistical analysis, which included frequency and percentage distributions. Means and standard deviations were used to characterize numerical data like age, CAT score, NMAT score, and GWAs. The data were recoded to represent ratio, interval, and ordinal levels. At a significance level of 0.05, Pearson's r correlation was used to evaluate the link between predictor and outcome variables. Stepwise linear regression was used to find significant predictors of academic achievement, with F-statistics as the criterion for entry/removal. Effects with p-values <0.050 were included, whereas effects with p-values >0.100 were excluded.

RESULTS AND DISCUSSION

Admission Criteria

Table 1. Distribution of the respondents in terms of their profile in terms of the admission criteria

Admission Criteria	2020		2021		2022		Total	
	F (n=118)	%	F (n=108)	%	F (n=98)	%	F (n=324)	%
NMAT percentile scores								
40 to 49	32	27.1	11	10.2	0	0.0	43	13.3
50 to 59	26	22.0	25	23.1	19	19.4	70	21.6
60 to 69	23	19.5	21	19.4	24	24.5	68	21.0
70 to 79	18	15.3	27	25.0	21	21.4	66	20.4
80 to 89	13	11.0	18	16.7	24	24.5	55	17.0
90 to 99	6	5.1	6	5.6	10	10.2	22	6.8
Mean	*62.04*		*67.42*		*72.47*		*66.99*	
SD	*14.94*		*13.60*		*12.44*		*14.38*	
Undergraduate general weighted average								
75 to 79	8	6.8	1	0.9	3	3.1	12	3.7
80 to 84	38	32.2	84	77.8	19	19.4	141	43.5
85 to 89	49	41.5	23	21.3	51	52.0	123	38.0
90 to 94	23	19.5	-	-	23	23.5	46	14.2
95 or above	-	-	-	-	2	2.0	2	0.6
Mean	*85.66*		*83.19*		*87.23*		*85.31*	
SD	*3.88*		*2.09*		*3.72*		*3.70*	
College admission test scores								

(conv. to standard t-score)								
29 to 39	20	16.9	19	17.6	16	16.3	55	17.0
40 to 50	50	42.4	35	32.4	33	33.7	118	36.4
51 to 61	28	23.7	37	34.3	39	39.8	104	32.1
62 to 72	19	16.1	17	15.7	7	7.1	43	13.3
73 to 83	1	0.8	0	0.0	3	3.1	4	1.2
Mean	*49.97*		*49.82*		*50.04*		*49.94*	
SD	*9.99*		*10.15*		*10.00*		*10.01*	
Honors/awards received								
Magna Cum Laude	-	-	-	-	3	3.1	3	0.9
Cum Laude	15	12.7	4	3.7	16	16.3	35	10.8
With Merit/Distinction	2	1.7	2	1.9	7	7.1	11	3.4
Other non-academic awards	3	2.5	8	7.4	2	2.0	13	4.0
None	98	83.1	94	87.0	70	71.4	262	80.9
Scholarships enjoyed								
None	112	94.9	102	94.4	74	75.5	288	88.9
Dean's Lister	6	5.1	6	5.6	24	24.5	36	11.1

Most students admitted had an NMAT of 50-79% accounting for 63% of the total. Only a few number students had an NMAT of 80% and higher (23.8%). More recent batches had higher mean NMAT scores. The average NMAT score for the 3 batches is 70%.

As to the general weighted average during the undergraduate course, most students had a GWA of 80-89% accounting for 81.5% of the total. The last batch had the highest GWA and the greatest number of students with a GWA of 90 and above. The average GWA of the 3 batches is 85.31%. The college admission test scores of the students admitted had an average score of 50%.

As to awards received during the undergraduate course, most had none (80.9%). A few had academic awards (15.1%) and a few had non-academic awards (4%). 88.9% had no scholarship benefit during their undergraduate course.

Predictors of Academic Performance of the Medical Students in Basic Subjects

Table 2. Parameters and coefficients of the predictors in the regression model of the academic performance of the Medical Students in Basic Subjects

Predictors	R^2-change	Regression Coefficients	Standard Error	p-value
(Constant)		67.988	2.723	0.000
College admission test score*	0.333	0.127	0.011	0.000
Scholarship enjoyed	0.056	1.624	0.371	0.000
NMAT percentile score*	0.016	0.029	0.008	0.000
Undergraduate course	0.015	-0.172	0.058	0.003
Undergraduate general weighted average*	0.008	0.071	0.032	0.026

Method: Stepwise regression analysis

Criteria for entry/removal: F Statistics (include effects with p-values <0.050; remove effects with p-values>0.100)

Regression model statistics: F=36.473; p=0.000; Accuracy=44.6% (Total R^2 =0.446)

Table 2 presents the parameters and coefficients of the predictors in the regression model of the academic performance of the COM graduates in Basic Subjects (taken during the first year) in which the F- ratio of 36.473 with a probability of 0.000 signifies that the null hypothesis is rejected which implies that using the model is better than guessing the mean. College admission test scores, scholarship enjoyed, NMAT percentile score, undergraduate course, undergraduate general weighted average, and undergraduate school graduated from are found to be significant predictors of the graduates' academic performance in Basic Subjects. It yielded a total R-square of 0.446 signifying a 44.6 percent accuracy of the model.

College admission test scores of the graduates can explain 33.3 percent of the differences in their academic performance in Basic Subjects. The regression coefficient of 0.127 with a probability of 0.000 means that for every unit increase in the CAT score, the academic performance in Basic Subjects is increased by 0.127 units. The college admission test is comprised of a 100-item multiple-item exam patterned from the NMAT covering Math, English, Biology, Physics, Social Science, Chemistry, and some general up-to-date knowledge. This means that the CAT administered by the college is a good predictor of academic success. This is consistent with the findings of Julian in 2005 and Donnon et al. in 2007.

Scholarship enjoyed by the graduates can explain 5.6 percent of the differences in their academic performance in Basic Subjects. A graduate who enjoyed a scholarship (coded as 1, while 0 for non-scholar) will have an added advantage of a 1.624 increase in his/her academic performance. This finding is consistent with the findings in the study done by DesJardins et al. in 2002, Kuh et al. in 2008 and Singh et al. in 2013.

NMAT percentile score accounts for 1.6 percent of the differences in the academic performance of the graduate in Basic Subjects. A percentile step-up in the NMAT score affects a 0.029 unit increase in the performance of the graduate. This is consistent with the findings of Julian in 2005, McManus et al. in 2013, and Groves et al. in 2007.

The undergraduate course explains 1.5 percent of the differences in the academic performance of the graduates. The more relevant the pre-med

course of the graduate (coded with a lower value, hence, the negative sign), there will be an increase of 0.172 units in his/her academic performance. This supports the findings of Ferguson et al. in their studies done in 2003 and 2010 that students with pre-medical backgrounds had better academic performance compared to those from non-pre-medical backgrounds, and also that of students with science degrees compared to those with non-science degrees. The foundational knowledge and exposure gained during pre-medical coursework may contribute to this advantage.

Lastly, as to undergraduate general weighted average and the school graduated from, each explains 0.8 percent of the differences in the academic performance of the graduate. A unit increase in the undergraduate GWA will affect a 0.071 unit increase in the academic performance in Basic Subjects. This is consistent with the findings of Wilkinson et al. in 2008 and Mitchell et al. in 2013.

Age had no significant effect on the medical student's academic performance during the first year which is in contrast to the study done by Aldous, Leeder, Price, Sefton, and Tuebner, 1999; Huff and Fang, 1999; Kay, Pearson, and Rolfe, in 2002 in which they found out that older medical students did less well in reasoning in the sciences and tended to be graded with lower scores at the beginning of their courses, up to and including the first year of their medical studies.

So, if we are to consider every unit change in the NMAT, CAT, and GWA, the CAT had the greatest effect on the first-year medicine GWA, followed by the undergraduate GWA and the least predictor is NMAT. With the other non-numeric parameters, the best predictor of first-year medicine GWA is whether the student had a scholarship during undergraduate school, is the undergraduate course (the lower coded courses like BSMLS/BSMT as better course).

Predictors of Academic Performance of the Medical Students in terms of Final General Weighted Average

Table 3. Parameters and coefficients of the predictors in the regression model of the academic performance of the COM graduates in terms of Final General Weighted Average

Predictors	R^2-change	Regression Coefficients	Standard Error	p-value
(Constant)		67.769	2.168	0.000
College admission test score	0.301	0.095	0.009	0.000
Scholarship enjoyed	0.099	1.686	0.285	0.000
Undergraduate general weighted average	0.030	0.093	0.025	0.000
NMAT percentile score	0.027	0.027	0.006	0.000
Civil status	0.016	1.611	0.491	0.001

Method: Stepwise regression analysis

Criteria for entry/removal: F Statistics (include effects with p-values <0.050; remove effects with p-values>0.100)

Regression model statistics: F= 43.991; p=0.000; Accuracy=49.4% (Total R^2 =0.494)

The final general weighted average of the COM graduate reflects his/her overall academic performance during his/her stay (first 3 years) in the COM. The parameters and coefficients of the

predictors in the regression model of the overall academic performance of the COM graduates are presented in Table 3d. The F-statistics of 43.991 with a probability of 0.000 indicates that using the model is better than guessing the mean when predicting the overall performance of the COM graduates.

It included college admission test scores, scholarship enjoyed, undergraduate general weighted average, NMAT percentile score, civil status, geographic location of family, and undergraduate school location as significant predictors in which, 30.1 percent, 9.9 percent, 3.0 percent, 2.7 percent, 1.6 percent, 1.3 percent and 0.8 percent of the differences in the overall performance is explained by each respectively reckoning a total accuracy of 49.4 percent.

A unit increase in the college admission test score of the COM graduate affects a 0.095 increase in his/her overall academic performance. This is consistent with the findings of Julian in 2005 and Donnon et al. in 2007.

Scholars (coded as 1, while 0 for non-scholars) enjoy 1.686 units of advantage in their overall academic performance. This finding is consistent with the findings in the study done by DesJardins et al. in 2002, Kuh et al. in 2008 and Singh et al. in 2013.

A higher undergraduate general weighted average also contributes a 0.093 unit increase in the COM graduates' overall academic performance while a higher NMAT percentile score contributes a 0.027-unit increase. This is consistent with the findings of Wilkinson et al. in 2008, Mitchell et al. in 2013 and Huff et al. in 2014.

Married (coded as 2, while 1 for single) COM graduates enjoy 1.611 units increase in their overall academic performance. This is consistent with the findings of Stratton et al. in 2005; Dyrbye et al. in 2011 and O`Connor et al. in 2012.

Predictors of Academic Performance of the Medical Students in Revalida

Table 4. Parameters and coefficients of the predictors in the regression model of the academic performance of the COM graduates in Revalida

Predictors	R^2-change	Regression Coefficients	Standard Error	p-value
(Constant)		59.434	2.166	0.000
College admission test score	0.207	0.206	0.022	0.000
Civil status	0.025	4.033	1.281	0.002
Scholarship enjoyed	0.020	2.331	0.711	0.001

Method: Stepwise regression analysis

Criteria for entry/removal: F Statistics (include effects with p-values <0.050; remove effects with p-values>0.100)

Regression model statistics: F=24.708; p=0.000; Accuracy=28.0% (Total R^2 =0.280)

Evident in Table 4 are the parameters and coefficients of the predictors in the regression model of the Revalida performance of the COM graduates. The total accuracy of the model is found to be 28.0 percent with F-statistics of 24.708 (p=0.000) suggesting that using the model is better than guessing the mean. Five profile variables were included in the model with significant effects on their Revalida performances.

College admission test score explains 20.7 percent of the differences in the Revalida performances of the medical students. A unit increase in the college admission test score will have an effect of 0.206 increase in the Revalida performance.

Married medical students had higher performance as compared to singles as civil status explains 2.5 percent of the differences in Revalida scores. They (coded as 2, singles as 1) enjoy a 4.033-unit increase in their Revalida. This is consistent with the findings of Stratton et al. in 2005; Dyrbye et al. in 2011 and O`Connor et al. in 2012.

Scholars (code as 1, non-scholars as 0) also enjoy 2.331 units increase in their Revalida scores. Enjoying a scholarship is accounting 2.0 percent of the differences in the Revalida performance.

Predictors of Academic Performance of the Medical Students in terms of Length of Stay in COM

Table 5. Parameters and coefficients of the predictors in the regression model of the academic performance of the COM graduates in in terms of length of stay in COM

Predictors	R^2-change	Regression Coefficients	Standard Error	p-value
(Constant)		5.395	0.209	0.000
College admission test score	0.097	-0.023	0.004	0.000
Scholarship enjoyed	0.011	-0.250	0.127	0.049

Method: Stepwise regression analysis

Criteria for entry/removal: F Statistics (include effects with p-values <0.050; remove effects with p-values>0.100)

Regression model statistics: F= 15.515; p=0.000; Accuracy=12.8% (Total R^2 =0.128)

Table 5 presents the parameters and coefficients of the predictors in the regression model of the graduates' length of stay in COM. Three variables are included as significant predictors in the model with an accuracy of 12.8 percent. The F-statistics of 15.515 (p=0.000) implies that using the model is better than guessing the mean.

Higher college admission test scores will result in a shorter length of stay in COM. The length of stay in COM will be reduced by 0.023 years when a medical student has a higher CAT score. This also explains 9.7 percent of the differences in this indicator of academic performance. This means that the CAT score is a better predictor of length of stay than the undergraduate GWA and the NMAT.

Scholarship enjoyed also accounts the 1.1 percent of the differences in length of stay among COM graduates. Scholars' (coded as 1, non-scholars as 0) completion time for their degree will be reduced by 0.250 years. It can be explained that if a student enjoys a scholarship during college, he/she is more likely to finish medical studies on time. Hence, the presence of a scholarship during college is a better predictor of a shorter length of stay in COM than getting an award or honor (academic and non-academic) during college. This finding is consistent with the findings in the study done by DesJardins et al. in 2002, Kuh et al. in 2008, Ganem in 2010, and Singh et al. in 2013.

CONCLUSIONS

The purpose of this study was to assess the influence and efficacy of various admissions strategies and processes on students' academic results at Cagayan State University-College of Medicine (CSU-COM) between 2016 and 2018. The study sought to examine how varied entrance criteria and profile traits affect medical students' academic performance. The findings show that college admission test (CAT) scores, scholarship status, NMAT percentile scores, undergraduate

general weighted average (GWA), undergraduate course relevance, and civil status all have a significant impact on various academic outcomes such as first-year GWA, final GWA, Revalida scores, and length of stay in medical school.

College admission test scores were repeatedly found to be the best predictor of academic achievement across several metrics, accounting for substantial differences in first-year GWA, final GWA, Revalida scores, and duration of stay. This demonstrates the CAT's dependability and predictive validity as a fundamental instrument in the admissions process. Students who received scholarships throughout their undergraduate studies consistently scored higher on all academic measures. This shows that financial aid and merit recognition may help students succeed academically. While NMAT scores predicted academic achievement, they had a less influence than CAT scores and scholarships. However, higher NMAT scores were still related with greater performance, indicating that they should continue to be used as an admissions criterion.

The undergraduate GWA was also found to be a strong predictor of both first-year and total academic performance, highlighting the value of earlier academic accomplishments in forecasting future success. The undergraduate course's connection to medical studies had a substantial influence, with students who took more relevant pre-medical courses performing better academically. Married students outperformed their single peers in both the overall and Revalida tests, showing the possible impact of life stability on academic achievement. While prizes and honors throughout undergraduate studies were less predictive, they did contribute to overall academic success, albeit to a lower amount.

RECOMMENDATIONS

Based on the findings, numerous recommendations are made. Given its high predictive potential, the CAT should remain an important part of the admissions process. The test's design, which covers a wide variety of important topics, appears to accurately assess the preparation of prospective medical students. Scholarships have a considerable favorable influence on academic achievements, which implies that extending scholarship possibilities might help students do even better. Efforts should be made to expand the provision of financial help for worthy students. While the NMAT is a valuable predictor, it should be used with other indicators such as CAT scores and undergraduate GWA. A comprehensive strategy that considers numerous variables will most likely result in the best admissions decisions. The undergraduate GWA should continue to be an important admissions factor. Admissions committees should pay significant weight to candidates' prior academic achievements since they predict future success. Admissions standards should encourage candidates with appropriate pre-medical experiences since they perform better in medical school. Pre-medical advice might be improved to help prospective students select appropriate undergraduate courses. Recognizing that married students may have particular talents, the institution should offer specialized assistance to help them balance their personal and academic duties. To capture a holistic picture of each applicant's potential, a variety of admissions methods, such as personal interviews and non-academic accomplishment measures, should be employed. This comprehensive strategy can aid in identifying well-rounded applicants who are likely to succeed.

REFERENCES

ASSOCIATION OF AMERICAN MEDICAL COLLEGES. (2014). Diversity in the Physician Workforce: Facts & Figures 2014. Association of American Medical Colleges.

BASCO JR, W. T., GILBERT, G. E., BLUE, A. V., & ELAM, C. L. (2000). The impact of undergraduate honors on performance in the clinical focus examination. Academic Medicine, 75(10), S25-S27.

BROWN, S. L. (2010). Marriage and child well-being: Research and policy perspectives. Journal of Marriage and Family, 72(5), 1059-1077.

CHENG, H. L., LIN, S. P., & MCDERMOTT, R. C. (2017). Racism and mental health in Chinese American college students. Journal of Counseling Psychology, 64(3), 401-411.

CLELAND, J., DOWELL, J., & MCLACHLAN, J. C. (2012). The predictive validity of the UKCAT: a national prospective cohort study. British Medical Journal, 345, e1805.

CLELAND, J., JOHNSTON, P., FRENCH, F., & NEEDHAM, G. (2012). Associations between performance in anatomy, clinical reasoning, and the medical school experience of first-year students: Learning anatomy at medical school. Medical Education, 46(1), 1-9.

COOKE, M., IRBY, D. M., & O'BRIEN, B. C. (2018). Educating Physicians: A Call for Reform of Medical School and Residency. Johns Hopkins University Press.

CROWE, A., TREACY, M. P., & JOYCE, D. (2018). Medical students' views on the value of taking a year out before medical school: a comparison of UK medical students who take a year out and those who enter medical school straight from undergraduate degree. BMC Medical Education, 18(1), 173.

DAI, Y. (2019). The Impact of Parental Education Levels on Academic Achievement of College Students. Journal of Higher Education Theory and Practice, 19(3), 63-72.

DESJARDINS, S. L., AHLBURG, D. A., & MCCALL, B. P. (2002). A Temporal Investigation of Factors Related to Timely Degree Completion. Journal of Higher Education, 73(5), 555-581.

ESSARY, A. C., COPELAND, H. L., & COKER, J. L. (2015). Mediating the Pipeline for Rural Medical Education: The Role of Critical Service Learning at Rural Undergraduate Hubs. Teaching and Learning in Medicine, 27(3), 280-289.

EVA, K. W., REITER, H. I., ROSENFELD, J., & NORMAN, G. R. (2009). The ability of the multiple mini-interview to predict preclerkship performance in medical school. Academic Medicine, 79(10), 1030-1036.

FARES J, AL TABOSH H, SAADEDDIN Z, EL MOUHAYYAR C, ARIDI H. STRESS, BURNOUT AND COPING STRATEGIES IN PRECLINICAL MEDICAL STUDENTS. N AM J MED SCI. 2016 Feb;8(2):75-81. doi: 10.4103/1947-2714.177299. PMID: 27042604; PMCID: PMC4791902.

FERGUSON, E., JAMES, D., & MADELEY, L. (2002). Factors associated with success in medical school: systematic review of the literature. BMJ, 324(7343), 952-957.

GROVES, M., GORDON, J., & RYAN, G. (2007). Entry tests for graduate medical programs: Is it time to re-think. Medical Education, 41(11), 1050-1057.

GUBBELS, J. S., VAN ASSEMA, P., & KREMERS, S. P. (2016). Physical activity, sedentary behavior, and stress among medical students. International Journal of Behavioral Nutrition and Physical Activity, 13(1), 1-9.

GUPTA, N. D., KRISTENSEN, N., & POZZOLI, D. (2020). Externalities of local economic growth in India: Testing the presence of social costs. Journal of Economic Behavior & Organization, 180, 988-1008.

HAFFERTY, F. W., GAUFBERG, E. H., O'DONNELL, J. F., SWICK, H. M., & STRAUSS, S. E. (2009). The Role of the Humanities in Medical Education: A Survey of Medical Students' Perceptions and Experiences. Medical Teacher, 31(11), 1067-1072.

JEGEDE, O. F., ADEGUN, P. T., & AKINSOLA, H. A. (2020). Socioeconomic factors influencing academic performance of medical students in preclinical and clinical years. Journal of Taibah University Medical Sciences, 15(4), 318-323.

JOSEPH, K. (2018). Influence of gender difference on reading habit and academic achievement of undergraduate medical students in University of Ibadan, Nigeria. Nigerian School Library Journal, 17, 75–86. https://www.africaneditors.org/journal/NSLJ/abstract/12515-93356

JULIAN, E. R. (2005). Validity of the Medical College Admission Test for predicting medical school performance. Academic Medicine, 80(10), 910-917.

LAM, W. K., CHOW, H. P., CHIU, C. Y., WONG, K. Y., & CHEUNG, S. Y. (2018). Cultural influences on students' academic motivation: A comparison between urban and rural backgrounds. Journal of Further and Higher Education, 42(8), 1035-1047.

LEMAY, J.-F., LOCKYER, J. M., COLLIN, V. T., & BROWNELL, A. K. W. (2007). Assessment of Non-Cognitive Traits Through the Admissions Multiple Mini-Interview. Medical Education, 41(6), 573-579.

MALAU-ADULI, B. S., O'CONNOR, T., RAY, R. A., VAN DER KRUK, Y., BELLINGAN, M., TEAGUE, P. A., ... & COOLING, N. (2019). Perceptions of graduates from an accelerated medical programme: a mixed-methods study. BMC Medical Education, 19(1), 85.

MARTINEZ, E. G., SUSI, T., & PEYTON, E. (2017). Urban versus rural academic success: A case study comparison of Southeastern Louisiana University's freshmen. Journal of College Student Retention: Research, Theory & Practice, 19(3), 309-321.

MITCHELL, K. J., DIAZ, R. J., & ROBINSON, M. R. (2013). Undergraduate GPAs as predictors of performance outcomes in medical school. Medical Education, 46(4), 455-461.

MONROE, A., & ORRINGER, K. (2008). The Effect of Undergraduate College Type on Medical Student Performance and Career Path: A National Cohort Study. Academic Medicine, 83(5), 468-473.

O'CONNOR, D. B., THAYER, J. F., & VEDHARA, K. (2021). Stress and Health: A review of Psychobiological processes. Annual Review of Psychology, 72(1), 663–688. https://doi.org/10.1146/annurev-psych-062520-122331

POWIS, D. A. (2015). Selecting medical students: An unresolved challenge. Medical Teacher, 37(3), 252-260.

RABINOWITZ, H. K., DIAMOND, J. J., MARKHAM, F. W., & PAYNTER, N. P. (2008). Critical Factors for Designing Programs to Increase the Supply and Retention of Rural Primary Care Physicians. Journal of the American Medical Association, 299(2), 235-237.

REITER, H. I., EVA, K. W., ROSENFELD, J., & NORMAN, G. R. (2007). Multiple Mini-Interviews Predict Clerkship and Licensing Examination Performance. Medical Education, 41(4), 378-384.

SINGH, K., GRANVILLE, M., & DIKA, S. (2013). Academic Motivation, Sense of Belonging, and Academic Achievement: Exploring the Link. The Urban Review, 35(1), 51-65.

THOMPSON, J. L., JOHNSON-JENNINGS, M., & NITZARIM, R. S. (2013). The impact of living-learning communities on students' academic success. Journal of College Student Development, 54(4), 393-401.

WILKINSON, T. J., WELLS, J. E., & BUSHNELL, J. A. (2002). Are differences between graduates and undergraduates in a medical course due to age or prior degree? Medical Education, 36(10), 883-888.

ACKNOWLEDGEMENT

The researcher wishes to acknowledge Engr. Arthur Ibanez, Dr. Edison Bravo, Engr. Junel Guzman, Dr. Rodina Gorospe and Engr. Roger Rumpon, Engineer. Policarpio Mabborang, Engineer. Emer Quezon and Judy Ann Unciano for their help and support with this research, as well as their consideration in its inception and conclusion.The researcher would also want to thank the campus research and development office personnel, as well as the financial and administrative staff, for their assistance in approving her requests to enable and complete her research.

To her enumerator and encoders for carefully classifying, analyzing, and coding the data, and to her statistician Mr. Nargloric Utanes for patiently re-analyzing and scrutinizing the massive data, as well as politely addressing and complying with the researchers' demands.

To her family for understanding her busy schedule, and to God, for without Him, this would not be possible.

Disclaimer

The results of this study represent only the students who were accepted in the Cagayan State University College of Medicine during academic years 2016-2018. This study does not intend to generalize especially in the selection of premedical courses since instructional standards differ in the different higher educational institutions.