Narrative Review of Predictors of Academic Performance in Nursing

Josephine N. Amadi (MSN, RN)
Faculty of Nursing, Lincoln University College, Malaysia

Regidor Poblete III (PhD, RN)
Faculty of Nursing, Lincoln University College, Malaysia

Glory B. Obong (PhD, RN)
Faculty of Nursing, Lincoln University College, Malaysia

Chijike Canis Irodi (M.Sc., M.Ed., RN)
Department of Nursing,McPherson University, Ogun State

Nonye Celestina Irodi (M.Sc., RN)
Department of Nursing Sciences, Igbinedion University

ABSTRACT: *This narrative review examines the diverse range of factors that predict academic performance in nursing education within the context of Nigeria. The review synthesizes existing literature to identify the multifaceted predictors that influence students' success in nursing programs. Through a comprehensive analysis, this review highlights the interconnected nature of these predictors, emphasizing their significance for students, educators, institutions, and policymakers. Drawing on a wide range of studies, this review underscores the crucial role of prior academic performance, entrance examination scores, and effective study habits as key determinants of academic success. Additionally, it emphasizes the importance of intrinsic motivation, clinical performance, and the role of support systems in shaping students' achievements. The review delves into the impact of personal characteristics, and socio-demographic characteristics, along with their implications for academic outcomes. Furthermore, the review acknowledges the influence of cultural and socioeconomic factors on academic performance, showcasing the need for tailored approaches that address the unique needs of diverse student populations. It also highlights the relevance of health and well-being, technology literacy, and effective communication skills as important predictors in the dynamic landscape of nursing education. In conclusion, this narrative review provides a comprehensive understanding of the intricate predictors that impact academic performance in nursing education in Nigeria. By recognizing these predictors and developing strategies to support them, educators, institutions, and policymakers can collaboratively enhance the quality of nursing education, cultivate proficient nursing professionals, and contribute to the advancement of healthcare in the region.*
KEYWORDS: predictors, academic performance, nursing

INTRODUCTION

Students' achievement in the classroom is a crucial indicator of a school's quality (Al-alawi et al., 2020). The global shortage of nurses is exacerbated by the fact that over 40% of students do not graduate on time due to low academic performance (Tartavoulle et al., 2018). To achieve success in school, one must demonstrate academic performance (Wibrowski et al., 2017).Concern has been raised by nursing educators, students, and sponsors over the outcomes of the General Nursing Council Examination. The quality of the nurses available to satisfy the medical demands of the world's population suffers greatly when nursing students do poorly in the classroom (Lancia et al., 2018). Such is the case with this sneak peek at the Afikpo campus of the Ebonyi State School of Nursing. It was founded in 1952, making it one of the oldest nursing schools in south-eastern Nigeria. In 1954, it had its first group of students take the General Nursing Certificate Exams. The school's credit and honours pass rates during those years ranged from 90 to 100 percent. In 1990, researchers first noticed a drop in the aforementioned graduation rate. The downturn was most pronounced in November of 2004 when the school's success percentage dropped to 20%. There were more reported failures on the practical nursing test at this period. Since then, the percentage of students passing the board exams has not been above 90%.

If nothing is done to stop it, this tendency will hurt nursing schools' rankings, reputations, and ability to keep students. The cause of the observed drop is unclear. However, the nursing board of directors attributes the problem to inadequate admittance standards. They argued that it would be easier to predict a student's achievement if admission standards were more selective between strong and weak candidates. The relative value of different admission criteria can be better understood by doing research on the elements that affect nursing students' academic achievement.

Conceptual Review
A narrative review of predictors of academic performance in nursing in Nigeria seeks to examine the various factors that influence students' success in nursing education. This review delves into research findings, studies, and literature to identify key predictors that affect academic achievement in nursing programs across Nigeria.A consistent predictor of success in nursing education is students' prior academic achievements. High school performance and scores on entrance exams are often indicative of students' ability to handle the rigorous coursework. Many nursing programs in Nigeria have entrance examinations, and higher scores on these exams have been linked to better academic outcomes. Students who perform well on these tests often possess the foundational knowledge needed for nursing education.

Effective study habits, time management skills, and self-discipline are crucial for managing the demanding coursework and clinical requirements in nursing programs. Students with strong study skills tend to perform better academically. Motivation and Commitment: Intrinsic motivation and a genuine commitment to the nursing profession can drive students to excel academically. A passion for nursing can result in increased effort and dedication to learning. The practical

component of nursing education, which includes clinical rotations and hands-on experience, is a significant predictor of academic success. Strong clinical performance indicates students' ability to apply theoretical knowledge to real-world scenarios. Family support, peer relationships, and mentorship play a role in academic achievement. Students who receive encouragement from their families and have positive relationships with peers and mentors are likely to perform better. Personal traits such as resilience, adaptability, and a strong work ethic can influence academic performance. Nursing education can be demanding, and students who possess these traits tend to navigate challenges more effectively. Positive interactions with faculty members, including accessible communication, mentoring, and guidance, contribute to academic success. Supportive faculty can provide valuable resources and motivation. Proficiency in the language of instruction (usually English) is essential for understanding lectures, reading course materials, and communicating effectively in nursing programs. As nursing education becomes increasingly technology-driven, students with good computer skills and the ability to adapt to digital learning platforms tend to perform well.

Physical and mental well-being are important predictors of academic performance. Students who manage their health effectively are better equipped to handle the demands of nursing education. Socioeconomic background and cultural factors can influence students' access to resources, support systems, and study environments, which in turn impact academic performance

Empirical Studies

Senior Secondary Certificate Outcomes and Accademic performance
Yousafzai and Jamil (2019) studied 197 Pakistani nursing school grads from 2008–2017 to see if there was a correlation between admission standards and professional success. A correlational, retrospective methodology was employed for this investigation. A small but statistically significant correlation ($r = 0.32$, $p = 0.01$) was found between the number of credits earned in secondary school and subsequent academic success. In addition, a high correlation was found between the secondary school completion rate and academic success ($\beta = 0.013$, $p < 0.001$).

Significant findings from a 13-year retrospective multi-cohort study of factors influencing nursing students' academic performance were uncovered by Lancia et al. (2018). Ten cohorts of nursing students at an Italian university were surveyed to obtain qualitative and quantitative information on entry characteristics and academic outcomes. From 2004 to 2017, 13 years of study were conducted. Extracted data was subjected to multivariate analysis, using a 5% significance level and a sample size of 2,278 student alumni records. There was a high correlation between grades in the final test and academic success in both qualitative (graduation on time) and quantitative (grade) measures ($p < 0.001$). Academic success might be foretold by SSCE scores ($\beta = 0.03$, 95%; CI: 0.001-0.05).

Plouffe et al. (2018) conducted a retrospective research to assess the likelihood of success and failure for Canadian dentistry students in relation to entry requirements. The University of Western

Ontario in Canada has produced eleven graduating classes of dental nursing students between 2004 and 2014. There were a total of 616 graduates whose transcripts were examined (332 men and 284 women). Higher Chemistry scores on the secondary school certificate were associated with better academic outcomes for students (p = 0.001). In order to better predict academic success, the researchers suggested that secondary school certificate Chemistry grades be considered by admissions committees.

Liu et al. (2018) in Korea conducted an interesting prospective study on the incremental effect of academic predictors on nursing admission assessment. The purpose of this research was to determine if prior academic accomplishment was a reliable predictor of early nursing school success. A substantial predictor of early nursing school achievement (p = 0.001) was a student's background in mathematics and English in addition to the sciences. The research supports a more economical student selection process based on basic topic evaluation in nursing schools. A hole remains unfilled since non-cognitive (socio-demographic) elements were not investigated.

Wambuguh et al. (2016) looked at how admittance standards affected the quality of American nursing schools. Grades from high school transcripts and test scores from before nursing school enrollment were found in a database of graduates. Both the students' qualitative (on-time graduation) and quantitative (NCLEX-RN pass rate) academic achievements were assessed. Students who earned a Credit or above on their high school transcripts (GPA = 3.0–3.7) had a 14% greater chance of graduating on time and an 11% greater chance of passing the National Council Licensure Examination for Registered Nurses (NCLEX-RN) (p = 0.01). The results led the authors to suggest that high school diploma grades were predictive and should be given more weight in nursing school admissions.

In order to evaluate the reliability of academic performance prediction utilising health sciences and medical college pre-admission criteria, Al-alwan et al. (2013) conducted a retrospective review. For 87 out of 1,905 Saudi students who attended a university between 2007 and 2010, information was collected on their pre-admission aptitude test score and grade on their secondary school diploma. The correlation between academic success and secondary school grades was shown to be statistically significant (r = 0.65, p = 0.01). 54% of the variance in academic performance was explained by the level of education attained on the secondary school certificate, according to a regression analysis.

Preadmission test outcomes and academic performance
Yousafzai and Jamil (2019) conducted a study on 197 nursing alumni in Pakistan from 2008 to 2017 to investigate the link between admission criteria and academic performance. The study used a retrospective correlational design. The pre-admission aptitude test was shown to be a predictor of academic performance (β = 0.005, p = 0.002).

Lancia et al. (2018) conducted a 13-year retrospective multi-cohort study on variables related with nursing students' academic outcomes and discovered significant findings. Using ten cohorts of

nursing students enrolled at an Italian institution, qualitative and quantitative data on entrance characteristics and academic results were collected. The research lasted 13 years, from 2004 to 2017. Multivariate analyses were performed on extracted data at a 5% level of significance using a sample size of 2,278 student alumni records. The pre-admission aptitude test result predicted academic achievement poorly (r = 0.14, 95% CI: 0.12-0.16). According to the authors, the pre-admission aptitude test result has a low predictive strength for academic success.

Plouffe et al. (2018) conducted a retrospective study on determining success and risk among Canadian dental students based on admission criteria, which offered valuable information. From 2004 to 2014, eleven graduating cohorts of dental nursing students at the University of Western Ontario in Canada were studied. A total of 616 alumni academic records were reviewed. Students who scored higher on the pre-admission aptitude examination had a higher probability of performing well academically (p = < 0.001). The authors advised that admissions committees take pre-admission aptitude test results into account when forecasting academic success.

In the United States, Wambuguh et al. (2016) investigated the role of admissions criteria in predicting nursing program performance. A review of nursing alumni's academic records yielded information on pre-admission aptitude test results. The students' qualitative academic performance (graduation on time) and quantitative academic performance (passing the NCLEX-RN) were examined. Students with a pre-admission aptitude test score of > 81% had an 8% higher probability of graduating on time and a 9% higher likelihood of passing the NCLEX-RN (licensure examination) (p = < 0.01). The authors concluded that pre-admission aptitude test scores should be included in nursing degree admissions processes.

Al-alwan et al. (2013) used a retrospective study to assess the prediction of academic performance using health sciences and medical school preadmission factors. Data on pre-admission aptitude test scores were obtained for 87 of 1,905 Saudi students who enrolled in a university institution between 2007 and 2010. The findings indicated that academic achievement was substantially related to pre-admission test score (r = 0.66, p 0.01).

Age and admission and academic performance
Alshanmari et al. (2018) performed a cross-sectional study on the factors impacting the academic performance of student nurses. It seems to be a representative sample of 201 Saudi nursing students. The outcomes of the study revealed no significant association between age and academic achievement (p = > 0.05). From 2008 to 2017, Yousafzai and Jamil (2019) evaluated the association between admission criteria and the academic performance of 197 nursing alumni in Pakistan. A retrospective correlational strategy was adopted in the investigation. Age was shown to be a non-significant predictor of academic success (p > 0.05).

Gender and academic performance
Yousafzai and Jamil (2019) conducted a study on 197 nursing alumni in Pakistan from 2008 to 2017 to evaluate the link between admission criteria and academic performance. The study used a

Publication of the European Centre for Research Training and Development -UK

retrospective correlational approach. Despite the fact that there were few men in the sample, there was a significant relationship between masculine gender and academic performance ($p = > 0.01$). The researchers came to the conclusion that male gender was a predictor of academic success.Lancia et al. (2018) found significant findings in a 13-year retrospective multi-cohort research on variables related with nursing students' academic outcomes. The qualitative and quantitative data on entrance characteristics and academic results were collected from ten cohorts of nursing students enrolling in an Italian institution. The research lasted 13 years, from 2004 to 2017. Multivariate analyses were performed on extracted data using a sample size of 2,278 student alumni records at a 5% level of significance. Female gender was associated with both timely graduation ($p = 0.001$) and final examination grade ($p = 0.001$).

Plouffe et al. (2018) conducted a valuable retrospective research on determining success and risk among Canadian dentistry students based on admission criteria. From 2004 to 2014, the University of Western Ontario in Canada graduated 11 batches of dental nursing students. 616 graduates (332 men and 284 women) had their academic records evaluated. Gender, a non-cognitive variable, was shown to have no predictive value ($p > 0.05$).
Alshanmari et al (2018) performed a cross-sectional study on variables influencing student nurses' academic performance. It looked at a random sample of 201 Saudi nursing students. The study's findings demonstrated a statistically significant relationship between gender and academic achievement ($p = 0.01$), but not with any other socio-demographic characteristic.

Marital status and academic performance
Yousafzai and Jamil (2019) surveyed 197 nursing alumni in Pakistan between 2008 and 2017 to analyze the association between entrance requirements and academic success. The research used a retrospective correlational method. The researchers came to the conclusion that marital status had no effect on academic success ($p > 0.05$). Lancia et al. (2018) reported significant findings in a 13-year retrospective multi-cohort research on variables related to nursing students' academic outcomes. Qualitative and quantitative data on admission qualities and academic performance were obtained from ten cohorts of nursing students enrolling at an Italian university. Marital status was shown to be unrelated to both timely graduation ($p > 0.05$) and final test grade ($p > 0.05$) by the researchers.

Plouffe et al. (2018) conducted a valuable retrospective study on measuring success and risk among Canadian dental students based on admission criteria. Marital status had no prognostic value for exam success rate ($p > 0.05$). Alshanmari et al. (2018) performed a cross-sectional study on the factors impacting the academic performance of student nurses. A random sample of 201 Saudi nursing students was studied. There was no statistically significant association between marital status and academic achievement, according to the study's findings ($p = > 0.05$).

Parity and academic performance
Lancia et al. (2018) discovered significant findings in a 13-year retrospective multi-cohort research on characteristics linked with nursing students' academic outcomes. The qualitative and

quantitative data on admission characteristics and academic results were gathered from ten cohorts of nursing students enrolling in an Italian institution. The research lasted 13 years, from 2004 to 2017. Multivariate analyses were performed on extracted data using a sample size of 2,278 student alumni records at a 5% level of significance. Academic achievement was not substantially related to parity status (p = 0.05).

Plouffe et al. (2018) conducted a retrospective study on identifying success and risk among Canadian dental students taking admission criteria into account, which offered critical information. From 2004 to 2014, 11 graduating batches of dental nursing students were studied at the University of Western Ontario in Canada. The academic records of 616 alumni (332 men and 284 females) were evaluated. Non-cognitive characteristics such as parity status were shown to have no predictive significance (p = > 0.05).

Alshanmari et al (2018) performed a cross-sectional study on variables influencing student nurses' academic performance. It looked at a random sample of 201 Saudi nursing students. The study's findings found that there was no statistically significant relationship between parity and academic success (p = > 0.05). Al-alwan et al. (2013) did a retrospective review to examine the accuracy of academic performance prediction using health sciences and medical college preadmission criteria. Data on pre-admission aptitude test score and secondary school certificate grade were obtained for 87 of 1,905 Saudi students enrolled in a university institution between 2007 and 2010. According to the results of the regression study, there is no relationship between parity and academic performance (p = 0.05).

Parent's occupation and academic performance
Yousafzai and Jamil (2019) investigated the association between admission criteria and academic performance on 197 nursing alumni in Pakistan from 2008 to 2017. The study used a retrospective correlational strategy. The study did not look into the predictive power of parental occupation. This reflects a knowledge gap that has yet to be adequately filled.

Lancia et al. (2018) discovered significant findings in a 13-year retrospective multi-cohort research on characteristics linked with nursing students' academic outcomes. The qualitative and quantitative data on admission characteristics and academic results were gathered from ten cohorts of nursing students enrolling in an Italian institution. The research lasted 13 years, from 2004 to 2017. Multivariate analyses were performed on extracted data using a sample size of 2,278 student alumni records at a 5% level of significance. Other non-cognitive characteristics were investigated, but parental occupation was not one of them. The study only looked at a narrow range of non-cognitive (socio-demographic) characteristics.

Plouffe et al. (2018) conducted a study on evaluating examination performance success and risk among Canadian dental students taking admission criteria into account. From 2004 to 2014, 11 graduating batches of dental nursing students were studied at the University of Western Ontario in

Canada. The academic records of 616 alumni (332 men and 284 females) were evaluated. Non-cognitive characteristics such as parental occupation were not investigated.

In Korea, Liu et al (2018) did a prospective study on the incremental influence of academic predictors on nursing entrance assessment. The study looked at the added importance of past academic performance in accurately predicting early nursing school success. Parental profession was not evaluated as a predictor of academic performance. A cross-sectional study was conducted by Alshanmari *et al* (2018) on factors affecting the academic performance of student nurses. It examined a random sample of 201 nursing students in Saudi Arabia. The study did not also examine the influence of parental occupation on academic performance.

Wambuguh et al. (2016) investigated the role of admissions criteria in predicting nursing program performance in the United States. A review of nursing alumni's academic records yielded information on secondary school certificate grades and pre-admission aptitude test results. Parental occupation was not examined as a predictor of qualitative academic performance (timely graduation) or quantitative academic performance (passing the NCLEX-RN).

Summary

In summary, seven related empirical studies published between 2013 and 2019 were found on the web and reviewed. Majority of the studies supported that Secondary school certificate grade was a more reliable predictor of academic performance in Nursing programmes compared to pre-admission aptitude test grades. One study specifically noted that as found Secondary school certificate grade in Chemistry subject was the best predictor among others. Another study expressed that Secondary school certificate grade in English and Mathematics added incrementally to Secondary school certificate grade's prediction of academic performance of nursing alumni. One study specifically mentioned that pre-admission aptitude test grade was a poor predictor of academic performance of nursing alumni. Furthermore, there was conflicting results regarding non-cognitive admission criteria. One study observed that feminine gender predicted qualitative and quantitative academic performance, but not other socio-demographic variables. On the other hand, another study noted no predictive pattern among all socio-demographic variables. Two other studies observed an association between masculine gender and academic performance although one of the studies had a limitation of too few males examined. The equivocal nature of findings regarding socio-demographic variables calls for more empirical research to be conducted on the subject.

CONCLUSION

In conclusion, the predictors of academic performance in nursing education in Nigeria form a complex web of interrelated factors that significantly influence students' success in their educational journey. This narrative review has highlighted the multifaceted nature of these predictors and their implications for nursing students, educators, institutions, and policymakers.

From the evidence presented, it is evident that combination of academic, personal, environmental, and institutional factors play pivotal roles in shaping students' achievements. The review underscores the importance of recognizing and addressing these predictors to enhance the quality of nursing education and ultimately produce competent and skilled nursing professionals.

As nursing programs continue to evolve and adapt to the changing educational landscape, it becomes imperative for stakeholders to design comprehensive strategies that support and optimize these predictors. Enhancing academic support systems, cultivating positive learning environments, fostering effective mentorship and faculty-student relationships, and promoting a culture of adaptability and resilience are all essential steps towards improving academic performance in nursing.

Moreover, acknowledging the influence of cultural, socioeconomic, and individual diversity is crucial for creating inclusive learning environments that cater to the unique needs of each student. By addressing language proficiency, technology literacy, and health and well-being, institutions can facilitate an environment conducive to both academic excellence and personal growth.In navigating the landscape of nursing education in Nigeria, understanding the predictive factors for academic success enables educators to tailor interventions that cater to the diverse needs of students. Through collaboration between students, faculty, families, and policymakers, it is possible to create a holistic approach to education that fosters a new generation of skilled, compassionate, and proficient nursing professionals.

This review serves as a foundational resource for further research, exploration, and development of evidence-based practices that contribute to the enhancement of nursing education in Nigeria. By implementing strategies that address the identified predictors, the nursing education system can continue to evolve, adapt, and produce graduates who are well-equipped to meet the dynamic challenges of healthcare and make meaningful contributions to society.

References

Ahmed, A., & Osman, M. (2020). The Effectiveness of Using WiziQ Interaction Platform on Students' Achievement, Motivation and Attitudes. *Turkish Online Journal of Distance Education*, 21(1), 19-30. https://eric.ed.gov/?id=EJ1238990.

Al-alawi, R., Oliver, G., & Donaldson, J. (2020). Systematic review: Predictors of students' success in baccalaureate nursing programs. *Nurse Education in Practice*, 48(1), 102865. https://doi.org/10.1016/j.nepr.2020.102865.

Al-alwan, I., Al-kushi, M., Magzoub, M., & Elzubeir, M. (2013). Health sciences and medical college preadmission criteria and prediction of in-course academic performance: a longitudinal cohort study. *Advances in Health Science Education Theory and Practice*, 18(3), 427-438. https://doi.org/10.1007/s10459-012-9380-1.

Alshanmari, F., Saguban, R., Pasay-an, E., Altheban, A., & Al-shammari, L. (2018). Factors affecting the academic performance of student nurses: a cross-sectional study. *Journal of Nursing Education and Practice*, 8(1), 60-69. https://doi.org/10.5430/jnep.v8n1p60.

Arbabisarjou, A., Siadat, S., Hoveida, R., Shahin, A., & Zamani, B. (2016). Managerial competencies for chairpersons: A Delphi study. *International Journal of Humanities and Cultural Studies*, 3(1), 1634–1645.

Baloyi, O., Ann-Jarvis, M., & Mtshali, N. (2022). A report of a South African university's management of undergraduate nursing students' teaching and learning following the COVID-19 interruptions. *Health SA*, 27(1), Article ID 1816.

Bao, W. (2020). COVID -19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, 2(2), 113-115. https://doi.org/10.1002/hbe2.191.

Bean, J. (1980). Dropouts and turnover: the synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(20), 155-187.

Berga, K.-A., Vadnais, E., Nelson, J., Johnston, S., Buro, K., R, H., & O. B. (2021). Blended learning versus face-to-face learning in an undergraduate nursing health assessment course: a quasi-experimental study. *Nurse Education Today, 96*(1), Article ID 104622. https://doi.org/10.1016/j.nedt.2020.104622.

Bloomfield, J., Roberts, J., & While, A. (2010). The effect of computer-assisted learning versus conventional teaching methods on the acquisition and retention of handwashing theory and skills in pre-qualification nursing students: a randomised controlled trial. *International Journal of Nursing Studies, 47*(3), 287-294. https://doi.org/10.1016/j.ijnurstu.2009.08.003.

Burgess, A., van-Diggele, C., Roberts, C., & Mellis, C. (2020). Team-based learning: design, facilitation and participation. *BMC Medical Education*, 20(Suppl 2), Article ID 461.

Burgoyne, J. (1989). Creating the managerial portfolio: Building on competency approaches management development. *Management Education and Development*, 20(1), 56 – 61.

Callwood, A., Jeevaratnam, K., Kotronoulas, G., Schneider, A., Lewis, L., & Nadarajah, V. (2018). Personal domains assessed in multiple mini interviews (MMIs) for healthcare student selection: a narrative synthesis systematic review. *Nurse Education Today*, 64(1), 56–64. https://doi.org/10.1016/j.nedt.2018.01.016.

Castro-Alonso, J., de-Koning, B., Fiorella, L., & Paas, F. (2021). Five strategies for optimizing instructional materials: Instructor- and learner-managed cognitive load. *Educational Psychology Reviews*, 33(4), 1379-1407.

Chahine, S., Plouffe, R., Goldberg, H., Sadler, K., Drosdowech, N., Bohay, R., . . . Hammond. (2019). Do factors from admissions and dental school predict performance on national board exams? a multilevel modeling study. *Journal of Dental Education*, 83(10), 1213-1223. https://doi.org/10.21815/JDE.019.111.

Chisadza, C., Clance, M., Mthembu, T., Nicholls, N., & Yitbarek, E. (2021). Online and face-to-face learning: evidence from students' performance during the Covid-19 pandemic. *African Development Reviews, 33*(1), S114-S125, https://doi.org/10.1111/1467-8268.12520.

De-Gagne, J., Park, H., Hall, K., Woodward, A., Yamane, S., & Kim, S. (2019). Microlearning in Health Professions Education: Scoping Review. *JMIR Medical Education*, 5(2), e13997.

Doménech-Betoret, F. (2018). The educational situation quality model: Recent advances. *Frontiers of Psychology*, 9(1), Article ID 328.

Fernández-Alemán, J., Carrillo-de-Gea, J., & Rodríguez-Mondéjar, J. (2011). Effects of competitive computer-assisted learning versus conventional teaching methods on the acquisition and retention of knowledge in medical surgical nursing students. *Nurse Education Today, 31*(8), 866-871. https://doi.org/10.1016/j.nedt.2010.12.026.

Fong, C., Davis, C., Kim, Y., Kim, Y., Marriott, L., & Kim, S. (2017). Psychosocial factors and community college student success: a meta-analytic investigation. *Review of Educational Research*, 87(2), 388–424. https://doi.org/10.3102/0034654316653479.

Gale, J., Ooms, A., Grant, R., Paget, K., & Marks-maran, D. (2016). Student nurse selection and predictability of academic success: the multiple mini interview project. *Nurse Education Today*, 40(1), 123–127. https://doi.org/10.1016/j.nedt.2016.01.031.

Gan, S. (2021). The role of teacher-student relatedness and teachers' engagement on students' engagement in EFL classrooms. *Frontiers Psychology*, 12(1), Article ID 745435.

Ghanbari, S., Haghani, F., Barekatain, M., & Jamali, A. (2020). A systematized review of cognitive load theory in health sciences education and a perspective from cognitive neuroscience. *Journal of Education and Health Promotion*, 9(1), Article ID 176.

Gibbs, T., Brigden, D., & Hellenberg, D. (2004). The Education versus Training and the Skills versus Competency debate. *South African Family Practice*, 46(10), 5-6.

He, H. (2021). Students' learned helplessness and teachers' care in EFL classrooms. *Frontiers of Psychology*, 12(1), Article ID 806587.

Jowsey, T., Foster, G., Cooper-loelu, P., & Jacobs, S. (2020). Blended learning via distance in pre-registration nursing education: a scoping review. *Nurse Education and Practice*, 44(1), 102775. https://doi.org/10.1016/j.nepr.2020.102775.

Kardong-Edgren, S., Oermann, M., & Rizzolo, M. (2019). Emerging theories influencing the teaching of clinical nursing skills. *The Journal of Continuing Education in Nursing, 50*(6), 257–262. https://doi.org/10.3928/00220124-20190516-05.

Kim, T., Chang, J., Myung, S., Chang, Y., Park, K., Park, W., & Shin, C. (2016). Predictors of undergraduate and postgraduate clinical performance: a longitudinal cohort study. *Journal of Surgical Education*, 73(4), 715-720. https://doi.org/10.1016/j.jsurg.2016.03.006.

Kirch, A., Schnitzius, M., Mess, F., & Spengler, S. (2019). Who are our students? Understanding students' personality for refined and targeted physical education: A scoping review. *Frontiers in Sports and Active Living*, 1(1), Article ID 31.

Lancia, L., Caponnetto, V., Dante, A., Mattei, A., La-cerra, C., Cifone, M., & Petrucci, C. (2018). Analysis of factors potentially associated with nursing students' academic outcomes: a thirteen-year retrospective multi-cohort study. *Nurse Education Today*, 70(1), 115-120. https://doi.org/10.1016/j.nedt.2018.08.020.

Liew, S., Sidhu, J., & Barua, A. (2015). The relationship between learning preferences (styles and approaches) and learning outcomes among pre-clinical undergraduate medical students. *BMC Medical Education*, 15(1), 44. https://doi.org/10.1186/s12909-015-0327-0.

Liu, X., Codd, C., & Mills, C. (2018). Incremental effect of academic predictors on nursing admission assessment. *Nurse Educator*, 43(6), 292-296. https://doi.org/10.1097/NNE.0000000000000502.

Louridas, M., Szasz, P., De-montburn, S., Harris, K., & Grantcharov, T. (2016). Can we predict technical aptitude?: a systematic review. *Annals of Surgery*, 263(4), 673-691. https://doi.org/10.1097/SLA.0000000000001283.

Ma, Q. (2021). The role of teacher autonomy support on students' academic engagement and resilience. *Frontiers of Psychology*, 12(1), Article ID 778581.

Mabizela, S., & George, A. (2020). Predictive validity of the National Benchmark Test and National Senior Certificate for the academic success of first-year medical students at one South African university. *BMC Medical Education*, 20(1), 152. https://doi.org/10.1186/s12909-020-02059-8.

Mak-van-der-Vossen, M., van-Mook, W., van-der-Burgt, S., Kors, J., Ket, J., Croiset, G., & Kusurkar, R. (2017). Descriptors for unprofessional behaviours of medical students: a systematic review and categorisation. *BMC Medical Education*, 17(1),164.

Malone, H., Nicholl, H., & Coyne, I. (2016). Fundamentals of estimating sample size. *Nurse Researcher, 23*(5), 21-25.

Mathew, M., & Thomas, K. (2018). Medical aptitude and its assessment. *The National Medical Journal of India*, 31(6), 356-363. https://doi.org/10.4103/0970-258X.262905.

McManus, I., Dewberry, C., Nicholson, S., & Dowell, J. (2013). The UKCAT-12 study: educational attainment, aptitude test performance, demographic and socio-economic contextual factors as predictors of first year outcome in a cross-sectional collaborative study of 12 UK medical schools. *BMC Medicine*, 11(1), 244. https://doi.org/10.1186/1741-7015-11-244.

Miñana-Signes, V., Monfort-Pañego, M., & Valiente, J. (2021). Teaching back health in the school setting: A systematic review of randomized controlled trials. *International Journal Environment Research Public Health*, 18(3), Article ID 979.

Mronkjaer, M., Flensborg-madsen, T., Osler, M., Sorensen, H., Becker, U., & Mortensen, E. (2019). Intelligence test scores before and after alcohol-related disorders-a longitudinal study of danish male conscripts. *Alcoholism Clinical and Experimental Research*, 43(10), 2187-2195. https://doi.org/10.1111/acer.14174.

Mufti, T., & Kifayatullah, I. (2014). Rehman Medical College admission criteria as an indicator of students' performance in university professional examinations. *Journal of Ayub Medical College Abbottabad*, 26(4), 564-567. .

Mwandigha, L., Tiffin, P., Paton, L., Kasim, A., & Bohnke, J. (2018). What is the effect of secondary (high) schooling on subsequent medical school performance? a national, UK-based, cohort study. *BMJ Open*, 8(5), e020291. https://doi.org/10.1136/bmjopen-2017-020291.

National Population Commission. (2019). Estimated population of states in Nigeria. *NPC Yearly Population Bulletin*, 19(1), 10-11.

Omid, A., Haghani, F., & Adibi, P. (2018). Emotional Intelligence: An old issue and a new look in clinical teaching. *Advanced Biomedical Research*, 7(1), Article ID 32.

Oudbier, J., Spaai, G., Timmermans, K., & Boerboom, T. (2022). Enhancing the effectiveness of flipped classroom in health science education: a state-of-the-art review. *BMC Medical Education*, 22(1), Article ID 34.

Parker, D., & Roumell, E. (2020). A functional contextualist approach to mastery learning in vocational education and training. *Frontiers of Psychology*, 11(1), Article ID 1479.

Patterson, F., Griffin, B., & Hanson, M. (2018). Opening editorial: selection and recruitment in medical education. *MedEdPublish*, 7(1), 1. https://doi.org/10.15694/mep.2018.0000222.1.

Pinehas, L., Mulenga, E., & Amadhila, J. (2017). Factors that hinder the academic performance of the nursing students who registered as first years in 2010 at the University of Namibia (UNAM), Oshakati Campus in Oshana Namibia. *Journal of Nursing Education and Practice*, 7(8), 63.

Plouffe, R., Hammond, R., Goldberg, H., & Chahine, S. (2018). What matters from admissions? identifying success and risk among canadian dental students. *Journal of Dental Education*, 82(5), 515-523. https://doi.org/10.21815/JDE.018.057.

Polit, D., & Beck, C. (2020). *Nursing research: generating and assessing evidence for nursing practice, 11ed.* Wolters Kluwer.

Polit, D., & Beck, C. (2020). *Nursing research: generating and assessing evidence for nursing practice, 11ed.* Wolters Kluwer.

Rajagopalan, I. (2019). Concept of teaching. *Shalanx International Journal of Education*, 7(2), 5-8.

Roach, A., Rose, A., Beiers-jones, W. S., Licaycay, W., & Nielsen, A. (2019). Incorporating group interviews into holistic review in baccalaureate nursing school admissions. *Nursing Education Perspectives*, 40(2), 125-127. https://doi.org/10.1097/01.NEP.0000000000000338.

Rysst, G., & Eriksson, I. (2021). Quality indicators in telephone nursing: An integrative review. *Nursing Open*, 8(3),1301-1313.

Sahu, P. (2020). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. *Cureus*, 12(4), e7541.

Santana, M., Manalili, K., Jolley, R., Zelinsky, S., Quan, H., & Lu, M. (2018). How to practice person-centred care: A conceptual framework. *Health Expectations*, 21(2), 429-440.

Santos, M., Otani, M., Tonhom, S., & Marin, M. (2019). Degree in Nursing: education through problem-based learning. *Revista Brasileira de Enfermagem*, 72(4),1071-1077.

Schneider, S., Beege, M., Nebel, S., Schnaubert, L., & Rey, G. (2021). The Cognitive-Affective-Social Theory of Learning in digital Environments (CASTLE). *Educational Psychology Review*, 30(1), 1-38.

Singh, N., Kulkarni, S., & Gupta, R. (2020). Is emotional intelligence related to objective parameters of academic performance in medical, dental, and nursing students: a systematic review. *Education for Health*, 33(1), 8-12. https://doi.org/10.4103/efh.EfH_208_17.

Skulmowski, A., & Rey, G. (2017). Measuring cognitive load in embodied learning settings. *Frontiers of Psychology*, 8(1), Article ID 1191.

Smith, M. (2021). Social Learning and Addiction. *Behavioural Brain Research*, 398(1), Article ID 112954.

Soemantri, D., Mccoll, G., & Dodds, A. (2018). Measuring medical students' reflection on their learning: modification and validation of the motivated strategies for learning questionnaire (MSLQ). *BMC Medical Education*, 18(1), 274. https://doi.org/10.1186/s12909-018-1384-y.

Spady, W. (1970). Dropouts from higher education: an interdisciplinary review and synthesis. *Interchange*, 1(1), 64-85.

Stankus, J., Hamner, M., Stankey, M., & Mancuso, P. (2019). Successful modeling of factors related to recruitment and retention of prenursing students. *Nurse Educator*, 44(3), 147-150. https://doi.org/10.1097/NNE.0000000000000579.

Sunshine, B. A., Lawrence, C., & Juan, J. T. (2015). Factors affecting the academic performance of student nurses of BSU. *International Journal of Nursing Science*, 5(2), 60-65. https://10.5923ij.nursing.20150502.04.

Tartavoulle, T., Adorno, M., Garbee, D., Kemsler, P., Manning, J., & Pierce, S. (2018). Predictors of success in BSN students. *International Journal of Nursing Education Scholarship*, 20170028. https://doi.org/10.1515/ijnes-2017-0028.

Terry, D., & Peck, B. (2020). Academic and clinical performance among nursing students: what's grit go to do with it? *Nurse Education Today*, 88(1), 104371. https://doi.org/10.1016/j.nedt.2020.104371.

Tiffin, P., McLachlan, J., Webster, L., & Nicholson, S. (2014). Comparison of the sensitivity of the UKCAT and A Levels to sociodemographic characteristics: a national study. *BMC Medical Education*, 14(1), 7. https://doi.org/10.1186/1472-6920-14-7.

Tinto, V. (1975). Dropout from higher education: a theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125.

van-Houten-Schat, M., Berkhout, J., van-Dijk, N., Endedijk, M., Jaarsma, A., & Diemers, A. (2018). Self-regulated learning in the clinical context: a systematic review. *Medical Education*, 52(10),1008-1015.

Vazirani, N. (2010). Competencies and Competency Model - A Brief Overview of its Development and Application. *SIES Journal of Management*, 7(1), 121-131.

Wambuguh, O., Eckfield, M., & Van-hofwegen, L. (2016). Examining the importance of admissions criteria in predicting nursing program success. *International Journal of Nursing Education Scholarship*, 13(1), 87–96. https://doi.org/10.1515/ijnes-2015-0088.

Watson, A., Timperio, A., Brown, H., Best, K., & Hesketh, K. (2017). Effect of classroom-based physical activity interventions on academic and physical activity outcomes: a systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity*, 14(1), Article ID 114.

Wei, Y. (2021). Enhancing teacher-student interaction and students' engagement in a flipped translation classroom. *Frontiers of Psychology*, 12(1), Article ID 764370.

Wibrowski, C., Matthews, W., & Kitsantas, A. (2017). The role of a skills learning support program on first-generation college students' self-regulation, motivation, and academic achievement: a longitudinal study. *Journal of College Student Retention*, 19(3), 317-332. https://doi.org/10.1177/1521025116629152.

Wong, S. (2020). Competency Definitions, Development and Assessment: A Brief Review. *International Journal of Academic Research in Progressive Education and Development*, 9(3), 95–114.

Yousafzai, I., & Jamil, B. (2019). Relationship between admission criteria and academic performance: a correlational study in nursing students. *Pakistan Journal of Medical Sciences*, 35(3), 858-861. https://doi.org/10.12669/pjms.35.3.217.

Zamanzadeh, V., Ghahramanian, A., Valizadeh, L., Bagheriyeh, F., & Lynagh, M. (2020). A scoping review of admission criteria and selection methods in nursing education. *BMC Nursing*, 19(1), 121. https://doi.org/10.1186/s12912-020-00510-1.