

Computer-Based Test (CBT) for Nursing Licensure Examination: Pioneer candidates Experiences and perception of the premier test in Ghana

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Abstract: To explore the experiences and perception of pioneer (First batch) computerized nursing licensure exam candidates The study employed a mixed methods approach using an e-survey technique with structured questionnaires to collect post-test data from the 2018 diploma in psychiatric nursing graduates of the Pantang nurses' training college in Accra, Ghana, pioneer test takers of the premier 2018 computerized nursing licensure examination.

Majority of the candidates reported a positive experience and preferred the computer-based test (CBT), but were of the view that the system can be improved. The result suggests the need to implement a similar test system within the training curriculum.

Keywords: Computer-based Test, Nursing Licensure, Nursing education, Ghana.

I. INTRODUCTION

Nursing and midwifery practice, education and ensuring standards is under the mandate of the nursing and midwifery council of Ghana (NMC, Ghana). To be registered as a nurse or midwife in Ghana, it is obligatory and open for graduates of nursing and midwifery programs to pass the Registered nurse or registered midwife certification examination of the NMC, Ghana scheduled twice (February and August) annually. (Amankwaa, Agyemang-Dankwah & Boateng, 2015; Bell et al., 2013; Dela & Gross, 2019)

The NMC, Ghana initiated the conduct of computerized nursing licensure examination in Ghana in 2018, the digital test started with only the diploma in registered psychiatric nurse graduates. The commencement has been pronounced as sudden but among the relevant policies in education of nurses since the previous thirty years. (Dela & Gross, 2019)

Qualifications in nursing usually find it challenging to continuously attain acceptable grades initially, this is observed widely among nursing colleges (Joy et al. 2017). The inability of a student to get the required score in the licensure assessment test pose disturbing effects, specifically, to failed students immensely, the nursing course, the nursing faculty and the availability of adequate nurses and midwife (Joy et al. 2017; Sifford & McDaniel, 2007), and a hindrance to individual confidence (Frith et al., 2008) . An explanation is the need for graduates to redeem themselves of possible

student related debts and a setback in career commencement, this can result in financial, emotional and psychological difficulties including elevated distress for the failed graduate (Joy et al. 2017; Sifford & McDaniel, 2007).

The preparedness of students and interventions of leaders remain significant elements in attaining higher scores in nursing licensure test (Wardani & Mahayanti, 2018). Among the strategies to halt lower NCLEX-RN marks below required level, curriculum reconsideration was undertaken with standardized accepted benchmarks leading to increased number of test questions, elevating pass score for nursing courses and introduction of prepared test questions similar to the board examination to students within their study duration (Joy et al. (2017).

Similarly, Sifford & McDaniel (2007) indicated that the leading intervention for nursing education programs to curb the declining rate of success levels in standardized nursing licensure test is remediation targeted at failure-risk candidates.

The investigation of Tao et al., (2016) aimed at discussing the perception of students regarding a secure laptop-based testing program (SLBT), revealed that, students admitted the SLBT to be assistive in experiencing sitting computer-based tests and adequately gets them ready for the Board examination. Likewise, a study conducted by Joy et al. (2017) explored the common know-how of integrating excellent rehearsals in the application of digital examination and learning components with curricular aiding instruments in delivery and outcome assessment, the result depicted the digital aiding tools are most potent in adding to the program's syllabus for increased success. This is consistent with Tao et al., (2016) who suggested that prior experience of digital testing is beneficial in taking the computer-based board examination. A suggestion that, it is imperative to alter students and tutor's attitude towards preparation prior to licensing test, this showed to be advantageous to all participants (Joy et al. (2017). Nonetheless, challenges including computer hitches and wireless malfunction were reported (Tao et al., 2016).

Exploiting digital laboratories is a strategy to undertake computerized examinations, however, computer resources are woefully inadequate in nursing schools in Ghana, this is congruent to Tao et al., (2016), stating that establishing computer-based test centres is difficult for institutions with narrow financial and technological facilities.

The initial factor to consider in analyzing information to buttress projections about the effectiveness of tests is availability of research evidence to back the assertion that the assessment is accurate (Mee & Hallenbeck, 2015), reliable and valid (Dela & Gross, 2019). Perception of test candidates and their tutors, information technology assistance and satisfaction of using the facility coupled with serenity of the test centre to contain requirements of the examination are vital factors in acknowledging the strength and deficiency in diverse aspects of the test (Mee & Hallenbeck, 2015). However, research to investigate the computerized nursing licensure examination in Ghana is scanty, despite the preparation to conduct the test nationwide. This paper seeks to explore the perception and experiences of the pioneer candidates of the premier computerized nursing licensure exam conducted by the Nursing and Midwifery Council (NMC), Ghana.

AIMS

The study aimed at exploring the experiences and perception of pioneer (First batch) computerized nursing licensure exam candidates in Ghana.

II. METHODOLOGY

The study employed a mixed methods approach using an e-survey technique with structured questionnaires to collect post-test data from the 2018 diploma in psychiatric nursing graduates of the Pantang nurses' training college in Accra, Ghana, pioneer test takers of the premier 2018 computerized nursing licensure examination. Thematic content analysis was used to analyze the data, response from participants were categorized.

The purpose of the research was explained to participants; it was clearly detailed that research was the only reason for collecting the data and participation was voluntary. They were made to understand that they can withdraw their participation at any point they so desire and their anonymity was ensured by asking the participants not to disclose their identity in responding to the survey question.

III. RESULT

Experiences and Perception of the Computer-based Test (CBT) Candidates

The data obtained depicts that 51 (52.58%) of the entire graduate population of 97 (100%) participated in the study, 25 (49%) and 26 (51%) of the participants were males and females respectively. The age of respondents ranged between 21 – 32 years with a mean age of 24 years.

Student's experiences, perception and resources in digital nursing licensure examination.

The following themes emerged from the feedback of the survey; frequency computer use, familiarity with the test, Internet network stability, preparatory strategies and interventions, professional review of test items, the establishment of computer laboratories and expansion of the computerized test nationwide.

The survey output illustrates that 21 (41.18%) of the participants reported positive experiences of the computerized testing system and suggested the expansion of the examination nationwide for all nursing graduates. However, students indicated the need for prior preparation strategies such as similar tests for end of semester assessments and exit examination in nursing schools. Also the result presented the need for critical review of test questions by professionals in the field aimed at alleviating technical glitches, ensuring accuracy of the questions and availability of possible answers to all test questions. Only 1 (1.96%) opted not to answer this aspect of the survey.

The frequency of computer use was obtained, the data presented 23 (45%), 15 (29.41%) and 13 (25.49%) used a computer daily, weekly and seldom respectively. Majority of the participants 50 (98%) reported of receiving orientation to the computer-based test and that it was a good experience, 45 (88%) preferred the digital test and 4 (8%) submitted for the continuation of the paper-based test whereas 2 (4%) did not register their preference for either of the two testing types. Pertaining to the resourcefulness and functional capacity of the computer exam setting, 49 (96%) of the participants affirmed that the testing centre was fit for purpose with 2 (4%) dissenting. However, 27 (52.94%) of respondents (51) who answered the use of computers and internet efficiency related question for improvement of the process proposed working on the speed and continuous connectivity of the internet and making available enough laptops for use within the curriculum during their study in nursing schools. Students complained of insufficient time due to the slow pace of internet connectivity and disconnection. A lamentation was that; despite such defects no additional time was given to candidates to make up for the time elapsed for such glitches.

Few students indicated that navigation through the test questions was slower and proposed the use of laptops instead of desktop computers. As reported by some students, it is imperative to initiate the introduction of computer technology application through the establishment of digital laboratories across nursing schools in Ghana.

IV. DISCUSSION

The graduates suggested the need for prior preparation strategies including similar test as end of semester assessments and exit examination in nursing schools, this was congruent to the assertion of Dela & Gross, (2019) who indicated that, the graduates lacked developing of the skill within their curriculum. This affirms the position of the students for imperative introduction of computer technology application and construction of digital laboratories in the nursing schools nationwide. It was however intriguing to note that, contrary to the opinion of Dela & Gross, (2019) indicating that anxiety will emanate from the hasty operation of the intervention, majority 98% of the graduates described it as a positive experience although the skill was not integrated to be part of their studies. However, the finding of the study where candidates expressed concern regarding continuous internet connection and availability of enough laptops is in line with the submissions of Tao et al., (2016) who reported challenges such as computer hitches and wireless malfunctioning.

The data depicts that, only a few (8%) of the candidates preferred the paper-based tests. This number is quite low but could be due to the relative low number of respondents. There could be more students who would also choose the paper-based tests. Due to the research-proven positive perception of the computerized test. Further to conducting computer-based end of semester examinations, it is recommended that students undergoing nursing and midwifery training require skills regarding the pros and cons possibly through 1st year to 3rd year. This will physically and psychologically prepare their minds towards the computerized exam and hence yield more positive results.

V. CONCLUSION

The use of the computerized-based test in the NMC licensure exam is very significant and a key relevant policy in nursing education. Majority of students are in support of the computerized tests but require its inclusion into their on-campus examinations. Most (88%) students preferred the digital exam but only a small percentage reported a positive first time experience. This depicts the need for adequate and effective preparation for a more enhanced experience.

REFERENCES

- [1] Amankwaa, I., Agyemang-Dankwah, A. & Boateng, D. (2015). Previous Education, Sociodemographic Characteristics, and Nursing Cumulative Grade Point Average as Predictors of Success in Nursing Licensure Examinations. *Nursing Research and Practice*, 2015. s <http://dx.doi.org/10.1155/2015/682479>.
- [2] Bell, S. A., Rominski, S., Bam, V., Donkor, E., & Lori, J. (2013). Analysis of nursing education in Ghana: Priorities for scaling-up the nursing workforce. *Nursing & health sciences*, 15(2), 244–249. <https://doi.org/10.1111/nhs.12026>.
- [3] Dela, C. C. & Gross, J. (2019). An Analysis of the Introduction of Digital Nursing Licensure Examination in Ghana. *International Journal of Caring Sciences* 12 (3): 1892 – 1897.
- [4] Frith, K. H., Sewell, J. P. & Clark, D. J. (2005). Best Practices in NCLEX-RN Readiness for Baccalaureate Student Success. *Comput Inform Nurs*, 23(6): 322–329.
- [5] Joy et al. (2017). Effective Utilization of Computerized Curricular Assistive Tools in Improving NCLEX-RN Pass Rates for a Baccalaureate Nursing Program. *CIN: Computers, Informatics, Nursing*, 35 (4): 194 – 200.
- [6] Mee, C. L. & Hallenbeck, V. J. (2015). Selecting Standardized Tests in Nursing Education. *Journal of Professional Nursing*, 31(6): 493–497.
- [7] Sifford, S. & McDaniel, D. M. (2007). Results of a Remediation Program for Students at Risk for Failure on NCLEX Exam. *Nursing Education Perspective*, 28(1): 34-36.
- [8] Tao, J., Gunter, G., Tsai, M-H. & Lim, D. (2016). Evaluation of a Secure Laptop-Based Testing Program in an Undergraduate Nursing Program Students’ Perspective. *CIN: Computers, Informatics, Nursing*, 34(1): 26-36.
- [9] Wardani, Y. & Mahayanti, A. (2018). Preparation Strategic and Results of Nursing Exam of Nursing Diploma in Indonesia. *International Journal of Studies in Nursing*, 3 (3): 91 – 99.
- [10] Campbell, T. D. et al. (2019) ‘A Closer Look at the Introduction of the NCLEX-RN in Canada’, *Nursing Leadership* (1910-622X), 32(4), pp. 46–56. doi: 10.12927/cjnl.2020.26102.
- [11] McGillis Hall, L., Lalonde, M. and Kashin, J. (2016) ‘People are failing! Something needs to be done: Canadian students’ experience with the NCLEX-RN’, *Nurse Education Today*, 46, pp. 43–49. doi: 10.1016/j.nedt.2016.08.022.
- [12] Poster EC (2004) ‘Guest editorial. Psychiatric nursing at risk: the new NCLEX-RN Test Plan’, *Perspectives in Psychiatric Care*, 40(2), pp. 43–44. Available at: <https://search-ebsohost-com.proxy.lib.ul.ie/login.aspx?Direct=true&db=ccm&AN=106657523&site=ehost-live> (Accessed: 9 April 2020).