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Research Article

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Correlation Between Health Assessment and RLE 2 Courses at Tobruk University

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Abstract

Health Assessment (HA) and Related Learning Experience 2 (RLE 2) are foundational courses for nursing students at Tobruk University. This study aimed to investigate the potential correlation between student performance in HA and RLE 2 to enlighten curriculum adjustments and improve student preparation for clinical practice. This study employed quantitative methodology consisting of three batches from the school year endings 2021, 2022, and 2023. A total of 263 student records were selected for this study. The collected data were measured using the Pearson product-moment correlation coefficient based on the final grades in both HA and RLE 2, together with the semester grade average (SGA). As for the mean, RLE was higher than HA in all batches. The highest correlation between HA and RLE2 belonged to batch 2021, with r=0.6197. Correlation for batch 2023 was the highest between HA and SGA with r=0.8777. Batch 2021 tops in RLE2 and SGA correlation with r=0.73119. Other study findings were also presented in terms of variation and graphical presentation. Limitations and suggestions for further research were addressed. This study sought to inform the relationship between theoretical knowledge and clinical skill development in nursing students. The research findings can contribute to decision-making potential for possible curriculum development at the University, and consequently, bring about continuous improvement in the area of nursing education and practice.

Keywords: Clinical Skills; Health Assessment; Nursing Education; Related Learning Experience; Skills Laboratory.

INTRODUCTION

The curriculum that outlines student expectations is a vital part of the educational system (Akinoglu, 2017). Nursing curricula change to accommodate the needs of stakeholders, although accrediting bodies offer broad recommendations but do not enforce particulars (Abbott et al., 2023). Among the many obstacles facing nursing education in the twenty-first century are the rapidly evolving medical field and technological advancements (Alaban et al., 2023). Producing clinically competent nurses who can significantly contribute to the provision of high-quality, safe nursing care while adjusting to shifting practice environments is the main objective of a nursing education program (Landeen et al., 2016; Alaban et al., 2023). Nursing education often incorporates Related Learning Experiences (RLEs) to bridge the gap between theory and practice (Buhat-Mendoza et al., 2018). At Tobruk University, RLE serves as a crucial compo-

nent of the nursing curriculum, offering students hands-on skills and laboratory experience in preparation for various clinical settings. Typically, there are two aspects of nursing education: theory and practice (Arkan et al., 2018). A significant segment of a student's nursing education experience is dedicated to clinical learning (Mikkonen et al., 2016). It is also critical to note that nursing faculty tend to mold nursing students to have self-confidence and self-trust in their ability to perform holistically, interpersonally, and transculturally while participating in RLE when they provide them with the proper orientation, attention, and information (Gumabay, 2017). The University's College of Nursing implements a unique curriculum, incorporating Related Learning Experiences (RLE) courses alongside traditional lecture-based subjects as performed by nursing faculty members.

Health Assessment (HA) serves as a foundational course in nursing education, providing students with theoretical knowledge and skills in physical assessment (Jarvis, 2023; Tan et al., 2021), patient communication, and critical thinking (McDonald, 2023). The methodical and prompt process of gathering and analyzing data regarding a person's health from developmental and transcultural viewpoints is known as HA (Jarvis, 2023).

RLE is a crucial clinical/laboratory practice that allows students to apply their theoretical knowledge to a simulated setting with real-world patient care scenarios under the supervision of experienced nurses (Koukourikos et al., 2021). Considered a core subject, HA introduces students to skills and tools that serve as the foundation for other competencies (Egilsdottir et al., 2019; Tan et al., 2021) including RLE courses. Investigating the correlation between these two courses (specifically RLE 2) can provide valuable insights into the effectiveness of the curriculum in preparing students for clinical practice.

This study aimed to investigate the potential correlation between student performance in the HA course and their subsequent performance in RLE 2. Understanding this correlation can enlighten curriculum adjustments and improve student preparation for clinical practice. This study seeks to answer the following research question:

- What is the class performance of students in HA and RLE 2?
- What is the students’ Semester grade average (SGA)?
- Is there a statistically significant correlation between students’ final grades in HA and their performance in RLE 2?
- Is there a statistically significant correlation between HA and SGA as well as RLE 2 and SGA?

In this study, we hypothesized that there is a positive correlation between HA and RLE 2.

By gathering nursing students' records available at the Registrar's Office, this study attempts to provide valuable information on the possible relationship between knowledge in theory and skill development in terms of clinical practice at Tobruk University. The result of data measurement is expected to prove the reliability of the RLE 2 program for the development of practical skills based on the foundation laid by HA.

The acquired knowledge can be used to shape the curriculum by increasing the incorporation of theoretical concepts into RLE activities. It can also improve the emphasis on HA topics related to students' clinical performance. Finally, the study aims to support the ongoing reforms in nursing education at Tobruk University to prepare students for clinical practice and the provision of quality healthcare services.

MATERIALS AND METHODS

A retrospective quantitative method was used to conduct the study using data from the academic records of nursing students at Tobruk University who have taken both the HA course and RLE 2 skills laboratory performance from 2021 to 2023. The data includes the results of student performance via course grades in HA and skills evaluations in RLE 2. In addition, both courses will later be compared with SGA.

Variables:

- Final grade in HA.
- Final grade in RLE 2.
- SGA of the semester.

Sample and Sampling Method:

The study population was 1st year nursing students at the university. Purposive sampling was used to determine the sample size. A total of 263 students were selected after meeting the inclusion criteria explained below.

Data collection:

The Registrar's Office is where the data were gathered before recording and data measurements.

Inclusion and exclusion criteria:

The authors covered the last three years of the academic year of the study (A.Y. 2021, 2022, 2023). These were first-year students in their second semester. This was based on the 1st assessment record which included both passing and failing scores. This study did not include repeaters. The results of the second assessment were also eliminated. All 2nd-semester courses (seven courses) must have been taken by students up to the final exam to be considered eligible.

Data measures:

The collected data are tabulated in tables. The mean, SD, observation, and SGA were calculated For the HA and RLE 2. The Pearson product-moment correlation coefficient was used to compare HA and RLE 2, HA and SGA, and RLE 2 and SGA. The statistical measurements and graphical presentations were performed using Mini Tab version 17 and MS Excel.

Data Analysis:

The Pearson product-moment correlation coefficient was used to determine the strength and direction of the relationship between the two variables. Statistical significance was defined at $p < 0.05$.

Ethical Considerations:

This study was conducted following the ethical principles of informed consent, data confidentiality, and anonymity of the participants. All data were gathered and analyzed according to the university, and research ethics guidelines were followed.

RESULTS

Tables 1 and 2 show the mean, SD, and number of observations (students) for the final grades in HA and RLE 2 across the three batches (2021, 2022, and 2023). It can be observed that students in 2022 generally performed better in both courses compared to the other batches. 2023 had the lowest mean grade in HA but the second-highest in RLE 2.

Table:(1). Final Grade in Health Assessment

Batch	Mean	SD	Observation (n)
2021	37.9178	13.0902	73
2022	51.1250	14.8655	88
2023	39.8824	16.6806	102

SGA was presented in Table 2 in place of observation (Table 1) to avoid duplicating parts of the table. Similarly, batch 2022 had the highest SGA (46.0163) among the three school years.

Table:(2). Final Grade in RLE 2

Batch	Mean	SD	SGA
2021	50.5479	14.3072	35.0361
2022	56.3636	10.2992	46.0163
2023	56.2843	11.0502	38.6019

Table 3 shows correlation coefficients (r), p-values, and r interpretations for the correlation between the HA and RLE 2 grades for each batch. All three batches have positive correlations, indicating that students who perform well in HA tend to perform well in RLE 2 and vice versa. The correlation was strongest in 2021 (r=0.61970), interpreted as a moderate positive correlation, and weakest in 2023 (r=0.42996) or low positive but with a definite correlation. All p-values were less than 0.00001, indicating statistically significant correlations in all batches.

Table:(3). Correlation between HA and RLE 2

Batch	r	p-value	Interpretation
2021	0.61970	<0.00001	Moderate
2022	0.48243	<0.00001	Low
2023	0.42996	<0.00001	Low

A comparative scatter plot shows the correlation of HA and RLE 2 across the three batches where a smoother trend was found in figure 1 compared to r in figures 2 and 3.

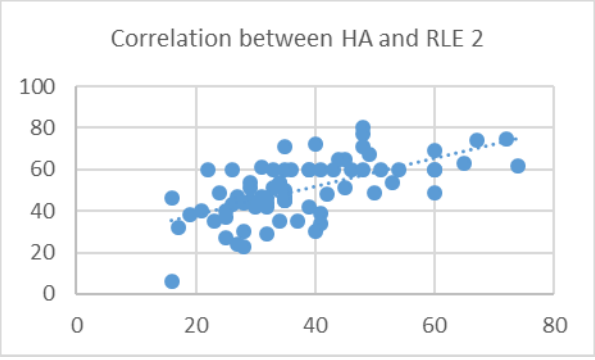

Figure: (1). Correlation of HA and RLE 2 year 2021

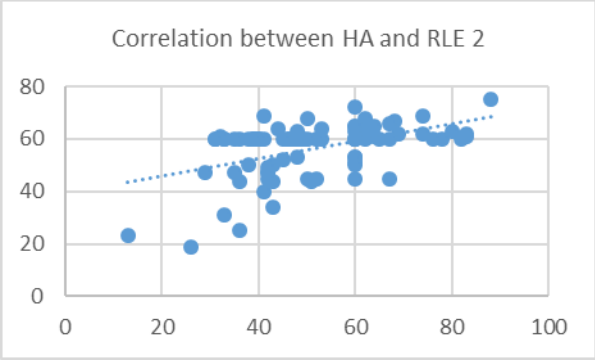

Figure: (2). Correlation of HA and RLE 2 year 2022

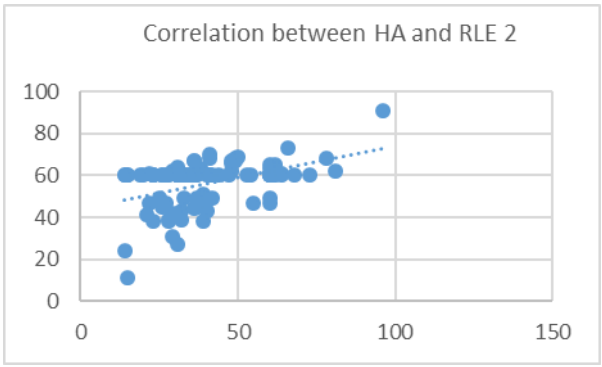

Figure: (3). Correlation of HA and RLE 2 year 2023

All batches recorded r>0.86 and p<0.00001 (high positive correlations) as shown in Table 4. This indicates a strong relationship between HA grades and SGA across all batches, meaning students who perform well in HA tend to have higher SGAs overall.

Table:(4). Correlation between HA and SGA

Batch	r	p-value	Interpretation
2021	0.86197	<0.00001	High
2022	0.87250	<0.00001	High
2023	0.87770	<0.00001	High

Compared with Figures 1-3, the higher r from the correlation of HA and SGA resulted in a smoother scatter plot in Figures 4, 5, and 6.

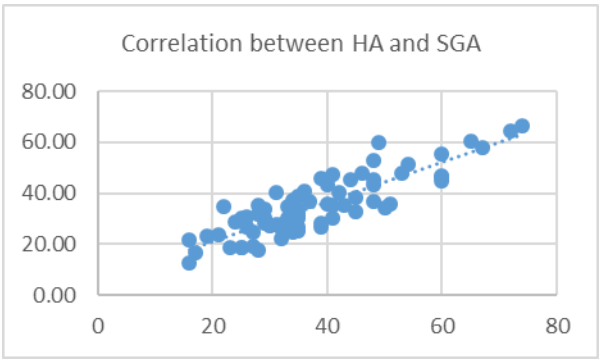

Figure: (4). Correlation of HA and SGA year 2021

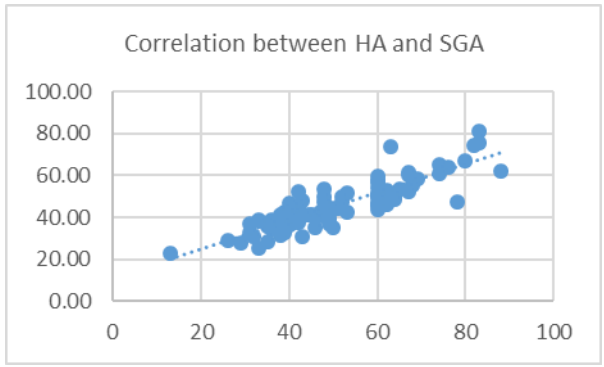

Figure: (5). Correlation of HA and SGA year 2022

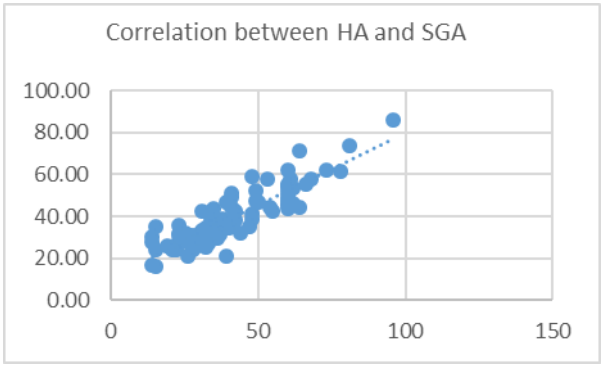

Figure: (6). Correlation of HA and SGA year 2023

The r value of 0.73119 indicates a high positive correlation between RLE 2 and SGA, similar to the HA-SGA relationship for 2021. The r value of 0.41556 suggests a low positive correlation, similar to the weaker HA-RLE 2 relationship observed in this batch. The r value of 0.54078 in 2023 denotes a moderate positive correlation, indicating a somewhat stronger relationship compared to 2022 but not as strong as 2021 (Table 5).

Table:(5). Correlation between RLE 2 and SGA

Batch	r	p-value	Interpretation
2021	0.73119	<0.00001	High
2022	0.41556	0.000057	Low
2023	0.54078	<0.00001	Moderate

Batch 2021 recorded the highest r in terms of the correlations between RLE 2 and SGA. The scatter plot in Figure 7 appears smoother than those in Figures 8 and 9.

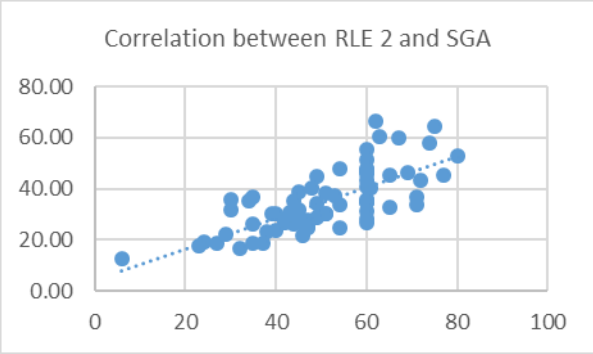

Figure: (7). Correlation of RLE 2 and SGA year 2021

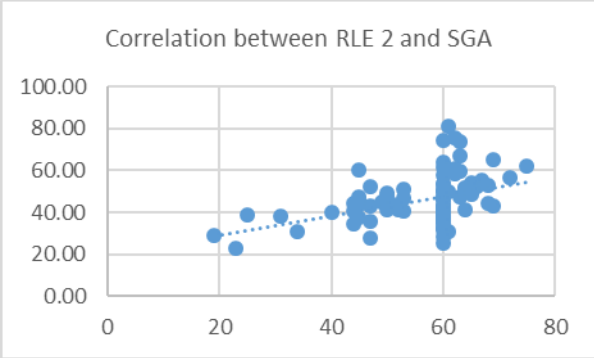

Figure: (8). Correlation of RLE 2 and SGA year 2022

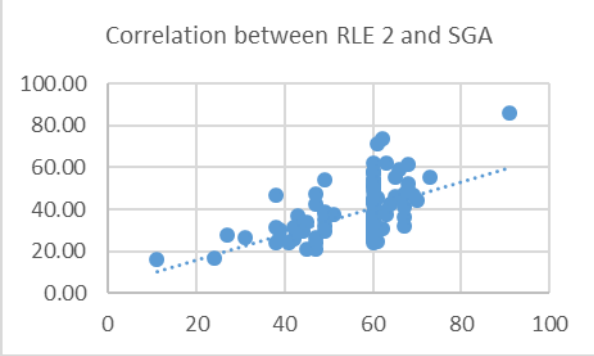

Figure: (9). Correlation of RLE 2 and SGA year 2023

DISCUSSION

As predicted by the theory, The results of the study support the statement that good HA performance would imply better RLE 2 performance. This outcome shows that HA training leads to improved preparedness for practice. A similar finding in the study by (Oducado et al., 2019) demonstrated a high correlation between theoretical classroom instructions and RLE among nursing students. The study emphasized sound theoretical instruction, and its positive correlation with stu-

dents' performance in their RLE involvement was revealed as a form of education model. The study also stressed the need for good pedagogy in HA. Instructors who use active learning and allow learners to practice what they learned by applying it in clinical settings increase the connection between theoretical knowledge and performance (Oducado et al., 2019).

The results provide interesting information on the correlation between HA, RLE 2, and SGA among the three batches.

1. Variable relationship between HA and RLE 2: In contrast to the stable connection between the HA-SGA, the relation between HA and RLE 2 is more diverse. The correlation of the 2021 batch is moderately positive, with a value of 0.61970, whereas those of 2022 and 2023 are relatively weaker, with values of 0.48243 and 0.42996, respectively. This could mean that although HA performance somehow contributes to RLE 2, other factors are more likely to have a greater influence on this course.
2. Consistent strong correlation between HA and SGA: The most outstanding result was the distribution of a significant positive correlation between HA and SGA for all batches ($r > 0.86$ and $p<0.00001$). This indicates that the performance in HA, a theoretical basis, is a fundamental factor affecting overall success. The results conform with the function of the fundamental classes, which are aimed at establishing the knowledge and skills to improve and succeed in further classes.
3. Varying correlations between RLE 2 and SGA: As with HA-RLE 2, the link between RLE 2 and SGA appears to be highly variable. On the other hand, the first batch in the list, batch 2021, again has the strongest positive correlation $r = 0.73119$, while batch 2022 has the weakest $r = 0.41556$, and batch 2023 has a moderate correlation $r = 0.540780$. This implies that RLE 2 increases overall academic standing. However, the effect differs in batches.

The differences in course delivery or structural design between batches may account for some of the variations observed. Adaptations are expected to eventually consider the flaws of previous versions of the curriculum and try to cover them (Al Nozha & Fadel, 2017). Nevertheless, in practice, much depends on the modification type and its implementation scope, as such factors can impact how students perceive their general learning environment and education.

As a result, other factors concerning student demographics, learning styles, and perhaps even previous knowledge in each batch may also affect their performance as well as the observed correlations. Knowing students' learning style preferences is critical for success but their influence on achievement is limited therefore further research should be conducted (Hernández-Torrano, et al., 2017). A study done by (Hernández-Torrano et al., 2017) showed that visual and sequential learning styles are preferred by students. These preferences may be influenced by the demographics of the students, as well as the teaching styles of educators. Another piece of evidence illustrates the clinical supervisory role of nursing faculty that significantly contributes to developing skills in students and promotes the achievement of their career goals (Gumabay, 2017), which proves an educator's significance for students.

It is also possible that factors beyond the courses themselves, such as major life events, economic conditions (Tortorelli et al., 2022), and even the campus environment, could impact student performance and relations among classes.

Furthermore, detailed analysis may focus on the exact changes in curriculum, teaching practices, or learner characteristics that might help to pinpoint these differences across batches. The inclusion of student feedback or interview responses can also provide useful information about the experience of every course and how they measure the relationships between them. In addition, exploring the in-

fluence of factors outside the courses could provide broader knowledge about students' performance.

Limitations and Future Research:

The limitations of this study are the retrospective nature and confounding variables such as individual student motivation before experience. Further studies can use a longitudinal design to follow individual student development and describe the characteristics that make one successful at RLE 2. Furthermore, qualitative research on student accounts of the link between HA and RLE 2 might yield other useful information.

This study offers the potential to provide specific insights into the link between HA and RLE 2 at Tobruk University.

- Better design and sequencing of courses to ensure that students are sufficiently prepared for RLEs.
- The development of targeted interventions that would be used to support students who struggle in either the HA course or RLE 2.
- Better assessment methods for theory and practice in the nursing field of education.

Analyzing the specific causes for different relationships, deep knowledge of factors affecting student success in HA, RLE 2, and general academic performance will be obtained. Additional data points, such as specific RLE 2 skills assessments or student demographics, may provide a more refined analysis of the relationships identified.

CONCLUSION

In this study, Tobruk University nursing students' HA scores were studied in relation to their RLE 2 results. This understanding can provide evidence for use in curriculum development and improving students' foundations for clinical practice which contributes to better patient care.

The findings of this study provide empirical support for a positive relationship between HA performances, and the ability to perform laboratory skills in RLE 2. The design and implementation of the curriculum, as well as the advocacy of teaching techniques for HA, also, can also help nursing programs prepare students to be ready for the challenges and rewards that clinical practice entails.

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Author contributions: Contribution is equal among authors.

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