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The Relationship between Midwifery Students' Academic Resilience and Satisfaction of Self-directed Electronic Learning at the Incision Academy Platform

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Abstract: Background: Incision Academy Platform delivers interactive, flexible electronic learning for university students. Its effectiveness depends equally on technological capabilities and student satisfaction with academic resilience. **The purpose of the study** was to assess the relationship between midwifery students' academic resilience and satisfaction of self-directed electronic learning at the Incision Academy platform. **Design**: A descriptive correlational design was utilized. **Sample**: A simple random sample of 900 midwifery students of the credit-hours basic nursing program enrolled in the professional midwifery course was recruited. **Study Setting**: This study was conducted at the Faculty of Nursing, Mansoura University, Egypt. **Instruments**: A structured interview questionnaire schedule, Academic Resilience Scale (ARS-30), and Ritzman questionnaire were utilized to collect the study data. **Results**: The mean of academic resilience was 110.46 ± 22.18, with 30.8% of students classified as low, 52.7% moderate, and 16.6% high resilience; The mean of students' satisfaction of Incision Academy platform was 148.14 ± 36.63, with 51.8% of students reporting high satisfaction. Furthermore, a statistically significant positive correlation founded between total ARS-30 scores and Ritzman satisfaction scores r=0.06, ($p<0.05$). **Conclusion**: More than half of the studied midwifery students demonstrated moderate academic resilience and high satisfaction in the self-directed electronic learning in the Incision Academy platform. Additionally, a statistically significant positive correlation between academic resilience and satisfaction scores suggesting that well-designed electronic learning environments can enhance students' resilience and satisfaction. **Recommendation**: Micro learning- modules focused on adaptive problem-solving should be integrated into the Incision Academy Platform.

Keywords: *Academic Resilience, E-Learning, Incision Academy, Midwifery Education & Satisfaction.*

Introduction

Nowadays university students are overwhelmed with psychological and social responsibilities in addition to their academic responsibilities (Hamdan-Mansour et al., 2025). Studies show that, in particular, nursing students experience high levels of academic anxiety and psychosocial disturbances (Shehadeh et al., 2020). Several factors contribute to the psychosocial disturbances among nursing students, including clinical training, fear of risk in clinical settings, long duty hours, and inability to manage patients' needs (Masa'Deh et al., 2021; Sheppard-Law et al., 2024). Such struggles do challenge nursing students' wellbeing and their ability to manage day-to-day stressful events. The literature also indicates that nursing students experience stress related to transition through different nursing education levels, where various responsibilities and clinical settings are introduced (Wang et al., 2021). This highlights the need to address preparedness and willingness of nursing students to manage such daily stressors, which might compromise their wellbeing. Studies confirm that student resilience is a key factor in the effectively management of psychosocial needs (Abuejheisheh et al., 2024; Hamaideh et al., 2024; Hamdan-Mansour et al., 2024).

Academic resilience is the ability to recuperate from adversities that threaten intellectual development and recognized as a critical psychological component that supports academic achievement in educational contexts (Abuejheisheh et al., 2024; Hamaideh et al., 2024). Studies show that nursing students with higher levels of academic resilience demonstrate greater flexibility, eagerness to learn, self-motivation, and peer support (Thorsen, Yang Hansen, & Johansson, 2021). Resilient nursing students are also found to cultivate positive relationships more effectively, excel academically, and experience greater professional satisfaction (Hwang & Kim, 2023).

Electronic learning (E-learning), a modern educational paradigm, involves using information technology to deliver knowledge and training (Cidral, Oliveira, Di Felice, & Aparicio, 2018). Its benefits including ease of use, accessibility, high-quality content, flexibility, convenience, and reduced costs make it highly desirable for learners. Consequently, the rapid expansion of e-learning systems represents one of the most significant advances in contemporary higher education. These web-based platforms facilitate course administration, planning, and delivery by self-directed learning abilities (Almajali & Masadeh, 2021).

Self-directed learning (SDL) is defined as learners' psychological processes through which they intentionally direct themselves to acquire knowledge and develop problem-solving understanding (Geng, Law, & Niu, 2019). According to Loeng (2020), SDL requires students to take initiative and responsibility for their own education. As Robinson and Persky (2020) note, self-directed learners

actively determine learning activities to identify what needs to be learned. Self-directed learners are also recognized as demonstrating higher engagement in learning tasks compared to guided learners (Geng et al., 2019).

Students are expected to take the initiative to determine their own learning objectives, needs, and tactics, as well as to choose and implement effective teaching methods and assess their learning results (Durnali, 2020). Thus, self-directed learning (SDL) has been identified as a significant component of e-learning preparedness. It has been found to be a predictor of student's satisfaction and academic achievement in e-learning settings, as well as their intention to utilize e-learning systems (Balkaya & Akkucuk, 2021; Kumar, 2021; Yilmaz, 2017).

Among the most effective teaching methods is multimedia instruction, which simultaneously engages visual and auditory senses. Multimedia programs present a wide range of stimuli including text, speech, sound, music, visuals, animations, still images, and graphics (Shariff, Seretis, Lee, & Balasubramanian, 2016). The types of instructional media used in nursing education vary across institutions, instructors, and subject matter (Issa, Mayer, & Schuller, 2015).

Nursing educators typically explain theoretical concepts and demonstrate procedures before students practice them a "see one, do one" approach (Shariff, Kullar, Haray, Dorudi, & Balasubramanian, 2015). Among the primary teaching methods for practical procedures there are procedural courses (supported by films/manuals) and web-based training (Parmar, Shah, & Parmar, 2013). Technological advancements have transformed learning delivery, with digital tools now supplementing or replacing print materials (Norman & Furnes, 2016).

Incision Academy is a global digital academy available in more than 147 countries; it is the first online platform that receives the golden standard accreditation from Royal College of Surgeons- England. It is available in Egypt through Egyptian Knowledge Bank (EKB) since 2018. Incision Academy is a practical e-learning platform with a standardized approach to support practical skills education. The Academy contains more than 250 procedures, with 10 new additions each month. Every procedure is available in high-quality 2D or 3D format that can be played on any device. It includes step-by-step guides. All courses and related procedures are incorporates evaluation of learning progress by way of pre- and posttest.

While numerous studies have examined the impact of self-directed learning (SDL) on university students' academic resilience, variations across different dimensions of academic resilience remain underexplored. This study addresses this gap by investigating how midwifery students' satisfaction of self-directed e-learning at the Incision Academy Platform affects by academic resilience.

Operational Definition:

- **Self-directed e-learning**: In the present study, self-directed e-learning is a learning method where the midwifery students take

initiative to identify their goals, find resources, and evaluate their progress independently, often with some technical support of the information technology unit at Faculty of Nursing, Mansoura University.

- **Academic resilience:** In the present study, academic resilience represents the student's ability to succeed academically at the professional midwifery course despite facing new adversity or challenges (New electronic platform, new specialized procedures). It was assessed using academic resilience scale (instrument two).
- **Satisfaction**: In the present study, satisfaction denotes the student's attitude toward the electronic self-directed learning through the educational experience of the professional midwifery course at the incision academy platform. It was assessed using Ritzman Questionnaire (instrument three).

Purpose:

To assess the relationship between midwifery students' academic resilience and satisfaction of self-directed electronic learning at the Incision Academy platform.

Research questions

1) What is the level of midwifery students' resilience?
2) What is the level of midwifery students' satisfaction of self-directed electronic learning at the incision academy platform?
3) Is there a relationship between midwifery students' academic resilience and satisfaction of self-directed electronic learning at the incision academy platform?

METHODS

Design:

A descriptive correlational design was adopted. A descriptive correlational research design measures relationships between two or more variables without changing them. Unlike experimental designs, it does not prove causation but helps researchers identify relationship strength and direction using correlation coefficients (Siedlecki, 2020).

Setting:

The study was conducted at Mansoura University's Faculty of Nursing in Egypt's Dakahlia Governorate. The faculty integrates self-directed electronic learning into its curriculum through diverse courses and applied clinical experiences to contextualize learning. The midwifery course comprises modules in antepartum, intrapartum, postpartum care, and digital technologies for midwifery evidence-based practice.

Sampling:

This study included midwifery students who met the following criteria: currently enrolled in a credit-hour basic nursing program registered in the professional midwifery course, aged 20 years or older, students with incomplete answers were excluded.

Sample size:

Sample size was calculated using Epi Info 7 software. Based on a population of 1,600 third-year midwifery students, with a 95% confidence level, 50%

expected frequency of academic resilience, and 5% margin of error, the minimum required sample size was 344 participants. The adjusted sample size was increased to approximately 430 individuals and accounts for a 25% non-response rate. A final target sample size of 860 participants, rounded up to 900, was obtained by applying a design effect of 2 to account for the sampling design.

Instruments:

Instrument one: A structured interview questionnaire schedule

The questionnaire was prepared by the researchers after reviewing the literature to assess the general characteristics of the midwifery students. Four variables were included in the questionnaire: age, gender, residency, and the students' average daily study hours.

Instrument two: Academic Resilience Scale (ARS-30):

A 30-item psychometric instrument developed and validated by Cassidy (2016) to assess students' capacity to cope effectively with academic challenges. Each item is rated on a 5-points Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), with selected items reverse-scored to ensure that higher totals consistently reflect stronger resilience. Composite scores range from 30 to 150, with higher scores indicating greater resilience. In this study, total scores were classified into three levels to facilitate interpretation: from the possible maximum score, low resilience (< 60%), moderate resilience (60-80%), and high resilience (> 80%).

Instrument Three: Ritzman Questionnaire:

This 27-item survey, adopted from Harzif et al. (2018). Midwifery students were assessed for: feedback utility, knowledge gain, multimedia integration, training outcomes, and content comprehension. A 7-points Likert scale is used for rating, with 1 denoting "strongly disagree/very dissatisfied" and 7 denoting "strongly agree/very satisfied." The responses to each item are summed to determine the final score, which can range from 27 to 189. The raw score is divided by the highest possible score (189), and the result is multiplied by 100 to determine the percentage score. The percentage score was calculated by dividing the raw score by the maximum possible score (189) and multiplying by 100. Satisfaction levels were categorized as low (< 60% of the maximum score), moderate (60-80%) and high (>80%). Higher composite scores indicate better satisfaction.

Validity:

A panel of five experts (professors of Woman's Health and Midwifery Nursing (at Faculty of Nursing, Mansoura University) evaluated the instruments' face validity to make sure that all items were clear, relevant, and covered the material that was typically measured. The necessary adjustments were made as a result.

Reliability:

The reliability of the instruments was assessed using Cronbach's alpha

coefficient which was (α = 0.93) for the academic resilience scale (ARS-30) and (α = 0.87) for the Ritzman satisfaction Questionnaire.

Ethical Considerations:

Before the study commenced, approval was obtained from the Mansoura University Faculty of Nursing's Research Ethics Committee (IRB No. P.0624, on 21 August, 2024). Prior to the beginning of the study, each recruited midwifery student was informed of the study's purpose and provided online informed consent. Students' rights to confidentiality and voluntary withdrawal at any time were rigorously protected. All data were kept confidential. No ethical, religious, or cultural concerns were identified within the study protocols or data collection instruments, and midwifery students were not exposed to any risks. Furthermore, the midwifery students' rights and dignity were assured throughout the study through informing them that participation in the study is voluntarily.

Pilot Study:

A number of 19 midwifery students participated in a pilot study to assess the clarity, relevance, and reliability of the instruments. These students were excluded from the main study.

Procedure:

Data for the study were gathered between February and March 2025. The process commenced after obtaining the required permissions and acquiring Excel spreadsheets listing all third-level undergraduate midwifery students from the Academic Affairs Department. Participants were randomly selected. Data collection was done using an online Google Forms survey. The questionnaire link included a brief study explanation, a participation consent form, and the researcher contact information for inquiries. Data was collected about students' demographics, including age, gender, residency, academic year, and grade level. After configuration, the survey link was distributed to midwifery students via university email.

Statistical Analysis:

Data for the study were gathered between February and March 2025. The process commenced after obtaining the required permissions and acquiring Excel spreadsheets listing all third-level undergraduate midwifery students from the Academic Affairs Department. Participants were randomly selected. Data collection was done using an online Google Forms survey. The questionnaire link included a brief study explanation, a participation consent form, and the researcher contact information for inquiries. Data was collected about students' general characteristics, including age, gender, residency, academic year, and grade level. After configuration, the survey link was distributed to midwifery students via university email.

Results

Table 1: presents that the mean age of the students was 20.8 ±0.97 years. 74.3% of students were female and 65.9% resided in rural areas. The average daily sleep duration reported

was 7.4 ±1.5 hours. Regarding academic performance, the Last Grade Point Average (GPA) indicates a strong overall performance, with 31.3% and 32.6% of students achieving A+ or A grades, respectively.

Table 2: illustrates that the mean score for training outcome was 38.4 ± 9.8. Specific aspects of the midwifery students self-directed electronic learning at the incision academy platform; such as enjoyment of the learning atmosphere and perceived usefulness for their future careers, also received high ratings, with means ranging from 5.38 to 5.60. Regarding content comprehension, the total mean was 21.8 ± 5.7, students rated the clarity of the content and the sufficiency of time allocated for themes positively, with mean scores consistently around 5.42 to 5.45. Media integration received favorable evaluations in which the total mean was 22.3 ± 5.9). The use of 3D films and the online Academy were perceived as highly supportive for comprehension (5.53 ± 1.63 and 5.60 ± 1.56, respectively) and were considered a suitable format for presenting content. Training outcome items specifically related to confidence and clinical utility were also rated highly (The total mean was 22.1 ± 5.7). Students reported improved confidence in surgical knowledge (5.55 ± 1.55), more efficient use of operating room time (5.48 ± 1.56), enhanced understanding of procedures through a stepwise approach (5.60 ± 1.54), and perceived improvements in patient safety (5.52 ± 1.55). With respect to feedback utility (mean total = 16.0 ± 4.4), students suggested that additional visual resources could further enhance the learning experience. Specifically, they indicated a desire for more images and stills (5.47 ± 1.57), more videos (5.41 ± 1.61), and longer video content (5.13 ± 1.69).

Table 3: shows the overall satisfaction scores of midwifery students of self-directed electronic learning at the Incision Academy course, as measured by the Ritzman Questionnaire, had a mean of 148.14 ± 36.63, with possible scores ranging from 27 to 189. Regarding satisfaction categories, 17.1% of students reported low satisfaction, 31.1% reported moderate satisfaction, and more than half (51.8%) demonstrated high satisfaction with the educational experience of the course studied through incision academy platform.

Table 4: shows the relationship between the Grade Point Average (GPA) and the total satisfaction score among the midwifery students. The mean total scores vary significantly across different GPA categories, with A+ students achieving the highest mean score of 156.96±34.20, followed by A student at 147.50 ±36.05 and B+ students at 142.24 ± 35.58. Notably, there is a marked decline in scores for B students (133.72±44.94) and lower grades. This difference was statistically significant ($p<0.05$).

Table 5: presents the academic resilience of midwifery students, based on the Academic Resilience Scale (ARS-30). The overall mean score of ARS-30 is 110.46± 22.18. The classification of academic resilience reveals that (52.7%) of the studied

midwifery fall into the moderate category, while 30.8% are categorized as having low resilience. Only 16.6% of students demonstrate high academic resilience.

Figure 1: shows that there is a strong positive correlation between the studied midwifery students' academic resilience -30 total score and total satisfaction scores ($r=0.06$, $p<0.05$).

Table 6: presents the results of a linear regression analysis of predictors of the studied midwifery student satisfaction with the Incision Academy. Among the predictors, the GPA stands out as a significant positive predictor of satisfaction, with a coefficient of 3.824 ($p < 0.001$). Moreover, the academic resilience core is a significant positive predictor, with a coefficient of 0.979 ($p < 0.001$). Conversely, the demographic variables of age, sex, and residency did not show statistically significant effects on satisfaction (p-values>0.05).

Table 7: presents the results of a linear regression analysis investigating the predictors of students' academic resilience. The Ritzman satisfaction score emerges as a significant positive predictor of academic resilience, with an unstandardized coefficient of 0.365 ($p < 0.001$). However, the demographic variables of age, sex, GPA and residency do not show statistically significant influences on academic resilience (p-values>0.05).

Table 1. General characteristics of the studied midwifery students (n=900)

General characteristics items		NO.	%
Sex	Male	231	25.7
	Female	669	74.3
Residency	Urban	307	34.1
	Rural	593	65.9
Last GPA	A^+	282	31.3
	A	293	32.6
	B^+	70	7.8
	B	217	21.1
	C^+	6	0.7
	C	32	3.5
Age (Years) Mean ±SD		20.8±0.97	
Average daily hours of studying Mean ±SD		7.41±1.5	

Table 2. Midwifery students' satisfaction scores of self-directed electronic learning at Incision Academy Platform (N=900)

Ritzman Satisfaction Items (Answer options 1-7)	Mean ±SD
Training Outcome	38.4±9.8
1) Overall, I like the course	5.43±1.57
2) The learning atmosphere was agreeable	5.40±1.63
3) The learning was fun	5.60±1.60
4) I find the approach useful for my job	5.56±1.57
5) Investing time in the course was useful	5.49±1.61
6) I can apply the content of the course in my job	5.38±1.60
7) I derive personal use from the course	5.57±1.57
Content Comprehension	21.8±5.7
8) The contents were comprehensible	5.42±1.63
9) The language (foreign words and technical terms) was comprehensible	5.42±1.56
10)I kept up thematically in the course.	5.42±1.63
11)The time was sufficient for the theme covered.	5.45±1.60
Knowledge gain	27.4±7.2
12)I have the impression that my knowledge has expanded on a long-term basis	5.45±1.60
13)I will be able to remember the new themes well	5.41±1.54
14)I think that I will still be able to report what I learned sometime after the course.	5.46±1.57
15)I will apply what I learned to my day-to-day work	5.48±1.58
16) I would recommend the INCISION approach to my colleagues	5.60±1.56
Media Integration	22.3±5.9
17)The 3D films were helpful for my understanding	5.53±1.63
18)The online Academy was helpful for my understanding	5.60±1.56
19)The 3D film was suitable for presenting the contents	5.59±1.61
20)The online Academy was suitable for presenting the contents	5.60±1.65
Training outcome	22.1±5.7
21) I feel more confident in my surgical knowledge after following the INCISION Approach	5.55±1.55
22)I feel I made more efficient use of my time in the OR after following the INCISION approach.	5.48±1.56
23)My understanding of the procedure was helped by the step-by-step approach.	5.60±1.54
24)I feel patient safety is increased due to the INCISION approach	5.52±1.55
Feedback Utility	16.0±4.4
25)There needs to be more images/stills in the Academy.	5.47±1.57
26)There need to be more videos in the Academy	5.41±1.61
27)There need to be longer videos in the Academy	5.13±1.69

Table 3. Overall the studied midwifery students satisfaction of self-directed electronic learning at the Incision Academy platform (n=900)

Total satisfaction scores	
Mean±SD	148.14 ± 36.63
Minimum- Maximum	27-189
Reference range	27-189
Satisfaction with Incision Academy	**N=900 (%)**
Low	154 (17.1%)
Moderate	280 (31.1%)
High	466 (51.8%)

Table 4. Relationship between the studied midwifery students' satisfaction of self-directed electronic learning at the Incision Academy platform and GPA (n=900)

Last GPA	**Total satisfaction score**		**Significance test and p-value**
	Mean	**Standard deviation**	
A^+	156.96	34.20	ANOVA F=6.98 p<0.05
A	147.50	36.05	
B^+	142.24	35.58	
B	133.72	44.94	
C^+	144.58	34.96	
C	147.57	27.52	

Table 5. Academic resilience of the studied midwifery students (n=900)

Academic resilience scale (ARS-30) items	
Mean±SD	110.46±22.18
Minimum- Maximum	30-150
Reference range	30-150
Academic resilience classification	**N=900 (%)**
Low	277 (30.8%)
Moderate	474 (52.7%)
High	149 (16.6%)

Figure 1. Correlation between the studied midwifery students' satisfaction and academic resilience

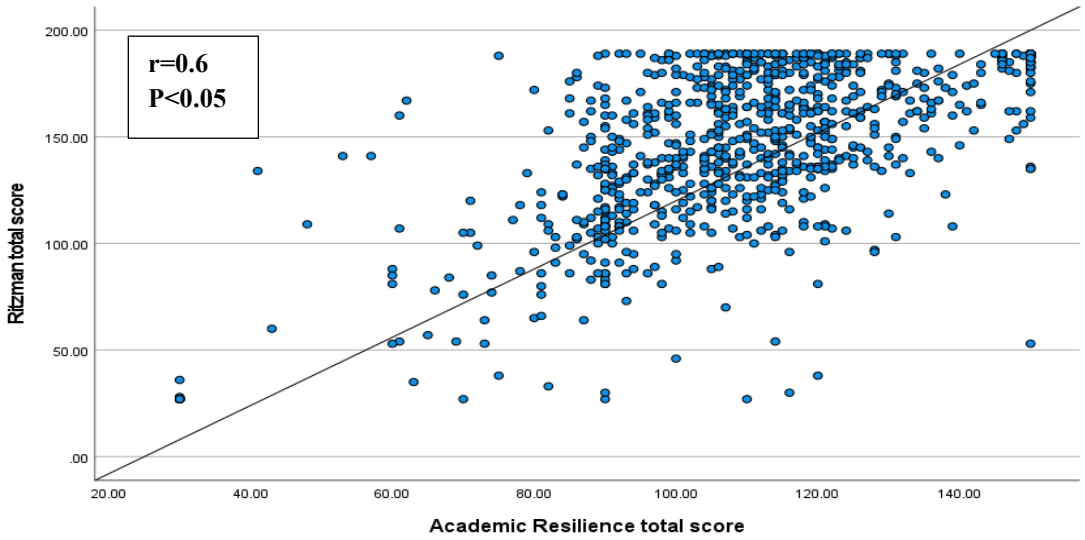

Table 6. Linear regression of predictors of the studied midwifery students' satisfaction of self-directed learning at the Incision Academy platform

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
Age	-0.648	.992	-.017	-.653	0.514	-2.594	1.298
Sex	-1.210	2.313	-.014	-.523	0.601	-5.749	3.330
Residency	0.766	2.043	.010	.375	0.708	-3.244	4.777
Last GPA	3.824	.892	.118	4.288	**0.000***	2.074	5.573
Academic resilience score	0.979	.044	.593	22.320	**0.000***	0.893	1.065
(Constant)	62.790	22.009		2.853	**0.004***	19.595	105.984

*Statistically significant ($p<0.05$)

Table 7. Linear regression of predictors of the studied midwifery student's academic resilience

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
Age	-0.171	0.606	-0.008	-0.283	0.777	-1.360	1.018
Sex	2.465	1.411	0.049	1.747	0.081	-0.304	5.234
Residence	0.353	1.248	0.008	0.282	0.778	-2.097	2.803
GPA	0.495	0.550	0.025	0.900	0.369	-0.585	1.574
Ritzman score	0.365	0.016	0.604	22.320	0.000*	0.333	0.398
(Constant)	53.932	13.385		4.029	0.000*	27.661	80.203

*Statistically significant ($p<0.05$)

Discussion:

The current study aimed to assess the relationship between midwifery students' academic resilience and satisfaction of self-directed electronic learning at the incision academy platform. The major findings revealed that there was a statistically significant positive correlation between midwifery students' academic resilience and satisfaction of self-directed electronic-learning at the Incision Academy platform.

Concerning midwifery students' academic resilience, the findings of the current study showed that more than half of the studied students achieved moderate academic resilience, while less than one-fifth of students exhibited high academic resilience scores. The present study finding may be attributed to the effectiveness of the incision academy platform; highly supported videos and resources, strict posttest exams and supported technical system. In parallel to the present study finding, a Chinese study by Tan et al. (2024) examined undergraduate nursing students' academic resilience and its relationship to their self-efficacy. They reported that approximately three-quarters of the participants had moderate academic resilience scores, whereas less than one-fifth of the nursing students exhibited high academic resilience scores. Likewise, an Egyptian study by Elattar, Zaki, and Barakat (2024) at Benha University's Faculty of Nursing in the Qalubia

governorate investigated how online learning affected students' academic resilience, psychological well-being, and self-efficacy during the COVID-19 pandemic. According to their findings, less than two-thirds had low academic resilience scores, whereas less than one-quarter of the students exhibited high academic resilience scores.

Regarding midwifery students satisfaction of self-directed Electronic-Learning at the Incision academy platform, the current study findings revealed that more than half of them were highly satisfied of the training outcomes, as indicated by higher mean scores on the Ritzman questionnaire. Specific aspects of the course, such as enjoyment of the learning atmosphere and perceived usefulness for their future careers, also received high mean scores. Theses study finding may be attributed to the flexibility, effectiveness and easily engagement in the incision academy electronic platform. These findings are consistent with a study conducted in Indonesia by Harzif et al. (2018), who examined the e-learning program at Incision Academy as a helpful teaching tool for improving participants' knowledge and skills. They also discovered that participants were satisfied with the training outcomes, with an average Ritzman questionnaire scores.

In terms of knowledge gain, the current study findings indicated that participants achieved higher satisfaction mean scores. These findings align with a Singaporean study by Siah, Huang, Poon, and Koh (2022), who examined how nursing students perceived online learning and its impact on their level of knowledge. Additionally, they found that participants engaged in online learning generally gained more knowledge. These study findings similarities may be attributed to the continuous evaluation process and effective resources and videos provided via the incision platform and reliable and responsive technical support.

According to the findings of the current study, participants achieved higher satisfaction mean scores for media components, such as 3D movies and the demand for more visual content. These findings are consistent with a study conducted in Finland by Koivisto, Niemi, Multisilta, and Eriksson (2017), who examined nursing students' experiential learning processes through the use of an online 3D simulation. They discovered that participants reported that 3D simulation offered audiovisual authenticity, and interactivity. Furthermore, Harzif et al. (2018) found in their study that participants rated the INCISION media positively, expressed a preference for 3D movies, and considered it a suitable medium for delivering content.

The finding of the present study showed that academic resilience is significantly and positively predicted by the midwifery students' satisfaction score. This study finding may be attributed to that the resilient student may be more motivated to learn, leading to increase the satisfaction in e-learning at the incision academy platform. However, there are no statistically significant effects of age, sex, GPA or residency on academic resilience. The present study finding

was supported with several correlational studies (Aldridge et al., 2020; Haktanir et al., 2021; Ndata and Akunna, 2022; Wang et al., 2022) who examined the relationship between resilience and life satisfaction among university students. These studies revealed a positive correlation between students' academic resilience and satisfaction. They indicated that academic resilience is very important predictor in promoting students' satisfaction.

Conclusion

A statistically significant positive correlation emerged between and midwifery students' academic resilience and satisfaction of self-directed electronic learning at incision academy. Additionally, more than half of the midwifery students demonstrated moderate academic resilience and high satisfaction in the incision academy platform.

Recommendations

- Micro-learning-enhanced modules focused on adaptive problem-solving should be integrated into the Incision Academy Platform to bridge the moderate resilience gap.
- Continuing professional development workshops are important for nursing educators to facilitate effective integration of Incision Academy courses into teaching practices.

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