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GENERAL WELL-BEING, ACADEMIC PERFORMANCE, AND ONLINE COURSE ENGAGEMENT AMONG THE RADIOLOGIC TECHNOLOGY STUDENTS IN CEBU DOCTORS' UNIVERSITY, A.Y. 2021–2022: PROPOSED ENHANCED LEARNING MODULE

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Abstract: This study assesses the general well-being, academic performance, and online course engagement of third year Radiologic Technology students who completed the Radiologic Pathology course at Cebu Doctors' University during Academic Year 2021–2022. A descriptive cross-sectional survey research design was employed. The General Well-Being Schedule (GWBS) and the Student Course Engagement Questionnaire-Modified (SCEQ-M) were used as instruments for data collection. Findings revealed that the majority of students experienced severe distress; however, this did not prevent them from passing the course. Most students who passed the course demonstrated moderate to high levels of online engagement. Conversely, students who failed the course generally experienced severe distress and had low to moderate online engagement. Notably, a few students with low engagement levels still managed to pass the course. These findings underscore the importance of strengthening students' general well-being and implementing strategies to enhance academic performance. To improve student engagement—particularly in online learning environments—educators are encouraged to enrich course materials and revise syllabi to foster greater participation and involvement.

Keywords: Academic performance in radiologic pathology, general well-being of radiologic technology students, student online engagement in radiologic pathology

I. INTRODUCTION

Well-being is the presence of positive emotions, life satisfaction, fulfillment, positive functioning, and absence of negative emotions, (Frey & Stutzer, 2002). Existing studies have determined the students' general well-being as one of the influencing factors in academic performance (Baby et al., 2022; Grabel, 2017; Pompilus & Pompilus, 2021). Students with high levels of well-being have stronger self-control, better coping abilities, higher academic performance, and more rewarding relationships than those with lower levels of well-being (Baby et al., 2022; Grabel, 2017).

Medical and allied health sciences programs, such as Radiologic Technology, are stressful degree programs. These programs have overwhelming academic demands which, on top of the limitations of online learning and the limited peer support, may eventually take its toll on students' health (Nyante et al., 2020). Poor mental health and low well-being can lead to severe stress, depression, or anxiety (Lim et al., 2022; Malolos et al., 2021), potentially affecting the students' quality of life and academic performance (Ip et al., 2016).

Students face academic pressure to perform well and consequently have a fear of failure (Adom et al., 2020). In the Philippines, education is highly valued and is considered the most important legacy of parents to their children because of the strong belief that a better education opens more opportunities that ensure good fortune and better financial

status (Maligalig et al., 2010). Students with good academic performance were found to have higher incomes, more job opportunities, and better employment benefits (Tadese et al., 2022).

Academic performance is not only influenced by one's well-being but also by the learning environment (Baby et al., 2022; Masud et al., 2019). Although online learning is a good alternative to face-to-face learning due to its flexibility, convenience, and accessibility (Firmansyah et al., 2021; Thamri et al., 2022), there are disadvantages to online learning. Lack of a structured learning environment, unstable internet connection, lack of technological resources, distractions, poor learning conditions, household responsibilities, lack of discipline, and increased assignments were some of its disadvantages (Alvarez, 2020; Baticulon et al., 2021; Firmansyah et al., 2021). Additionally, the absence of peers in the learning environment, lack of interactive lectures, and poor communication with the teachers can reduce motivation and academic engagement (Firmansyah et al., 2021; Thamri et al., 2022; Tuiloma et al., 2022).

Academic engagement is a multidimensional construct that refers to the psychological investment of effort toward learning, understanding, and mastering the knowledge, skills, or crafts that academic work is intended to promote (Newman et al., 1992). It is a substantial indicator of not only intellectual development but also student retention (Kuh, 2019).

Academic engagement is already a challenge in face-to-face classes, and even more so for online courses (Khan et al., 2017). Teachers face difficulties in communicating and providing individual feedback and find it challenging to replace face-to-face discussions with digital communication (Safta-Zecheria et al., 2020). Such difficulties pose a problem as they affect the student's academic engagement (Amerstorfer & Freiin von Münster Kistner, 2021). It can also affect their academic performance since teacher-related factors are one of the major influencing factors of academic performance (Alshammari et al., 2017).

Because of the observed decrease in students' academic engagement in online courses, the author set out to explore the general well-being, academic engagement, and academic performance of students enrolled in the Radiologic Pathology course of the Bachelor of Science in Radiologic Technology curriculum.

II. METHODOLOGY

The study utilized a descriptive cross-sectional design to assess the general well-being, academic engagement, and academic performance of third year students taking Bachelor of Science in Radiologic Technology (BS RadTech) program at Cebu Doctors' University. The respondents, consisting of 42 third year BS RadTech students who completed the Radiologic Pathology course during Academic Year 2021–2022, were gathered using complete enumeration.

This study utilized two instruments, namely, General Well-Being Schedule (GWBS) and the Student Course Engagement Questionnaire-Modified (SCEQ-M). The GWBS consists of an 18-item self-administered questionnaire that measures an individual's subjective well-being and distress with dimensions including Applied Engagement, Goal-oriented engagement, Self-discipline engagement, and Interactive engagement. With Cronbach's alpha coefficient of 0.896, the GWBS has shown acceptable reliability. The SCEQ-M consists of 23 items that assess a student's behaviors, thoughts, and feelings in the online course engagement. Similarly, SCEQ-M achieved an acceptable reliability of 0.896. For GWBS, the total score attained by a participant was interpreted as having severe distress (0–60), moderate distress (61–72), and positive well-being (73–110). The sum of scores for SCEQ-M was interpreted as having Low online engagement (68 and below), Moderate

online engagement (69–91), and High online engagement (92 and above). As for academic performance, the final grade for course at the end of the academic year was obtained.

The Institutional Ethics Review Committee (IERC) approved the implementation of this study. The data collection involved securing informed consent from the respondents and sending the Google Form link, which contained the questionnaires, via email. Measures were taken to ensure confidentiality and anonymity, including assigning unique codes to respondents and password protection of collected data.

IBM SPSS version 23 was used for the statistical analysis of the descriptives, such as frequency and percentages. The correlation of general well-being, academic performance, and online course engagement of the third year BS in Radiologic Technology students was determined.

III. RESULTS AND DISCUSSION

Table 1. Distribution of Students According to Level of General Well-Being (N = 42)

Level	Frequency	Percentage
Severe Distress	35	83.3%
Moderate Distress	5	11.9%
Positive Well-Being	2	4.8%

Table 1 shows that the majority (35, 83.3%) of the respondents experienced severe distress. This is attributed to the demanding nature of their chosen academic program and the pressure to excel in order to qualify for internship in the succeeding semester. Previous research reported high levels of stress, anxiety, and depression among university undergraduate students even before the COVID-19 pandemic (Brenneisen Mayer et al., 2016; Goodwin et al., 2020), particularly those enrolled in medical and healthcare-related programs (Abdulghani et al., 2021; Ragab et al., 2021). However, the prevalence increased during the pandemic, with 71% of students reported to have increased anxiety and stress because of the pandemic (World Health Organization, 2022).

The item analysis of GWBS revealed that 73.8% of the respondents were significantly under a great deal of strain, stress, or pressure, and 71.4% felt tired, worn out, used up, or exhausted all the time or most of the time. They also reported being very much and highly bothered by nervousness (66.7%), feeling sad, discouraged, hopeless, or having so many problems that they wondered if anything was worthwhile (47.6%), and sometimes feeling quite anxious, worried, or upset (47.6%). Half of the respondents were very concerned or worried about their health.

Most respondents (47.6%) were in control of their behavior, thoughts, emotions, or feelings. A high percentage also reported sometimes feeling quite happy, satisfied, or pleased with their personal life (61.9%), and have been waking up fresh and rested (64.3%). Additionally, 69.0% of them had a good bit of time or some of the time feeling emotionally stable and sure of themselves. These suggest that despite their distress, students may have been engaging in various personal coping strategies, including interacting with friends and family, talking to and encouraging themselves, and focusing on other activities at home (Baloran, 2020). Frequent social interaction with peers was proven to positively impact the effectiveness of online learning (Baber, 2022). It also helped that several mental health hotlines

and the University's counseling services were advertised online and accessible to the students (Witteveen et al., 2022).

Table 2. Distribution of Students according to Level of Online Course Engagement (N = 42)

Level	*f (%)*
Low Online Engagement	7 (16.7%)
Moderate Online Engagement	27 (64.3%)
High Online Engagement	8 (19.0%)

As presented in Table 2, most of the respondents, comprising 64.3%, reported a moderate level of online engagement. A smaller proportion of students (19.0%) had high online engagement, while 16.7% reported low online engagement.

According to the item analysis of the SCEQ-M, a high proportion of students find ways to make the course enjoyable to them (35.7%), really desire to learn the material (47.6%), do all the homework problems (45.2%), come to class every day or log on to the class webpage regularly (45.2%), are confident that they can learn and do well in the class (42.9%), put forth effort (40.5%), making sure to study regularly (40.5%), listen carefully in class or read online course discussion posts (47.6%), and help fellow students (35.7%). Most of them also reported that going over their notes between classes was moderately characteristic to ensure that they understood the material.

The amount of effort invested by the student and motivation are vital factors to academic success among students, particularly in medical settings (Von Kriegstein, 2016). With the shift to online courses, students must invest double the effort into their studies (Biwer et al., 2021). Online learning has given students more independence, and there is a more significant requirement for them to take charge of their learning, which makes self-directed learning skills, peer-assisted learning, and collaborative learning meaningful to increase academic engagement (Elshami et al., 2022;).

Interestingly, almost half of them reported that it was not at all characteristic of them to get in contact with professors to review assignments or ask questions (40.5%). The majority also noted that it was not characteristic of them to raise their hand or answer questions in class (50.5%) and ask questions when they needed help understanding the instructor (38.1%).

In support of Wang et al. (2022), learner-instructor interaction did not significantly predict academic engagement. Learner-learner and learner-content interactions predict academic engagement in an online class, with learner-content interaction as the strongest predictor. This suggests that the course design, suitable teaching methods, and utilization of solid design principles can help increase academic engagement (Tuiloma et al., 2022). However, the current findings contradict previous studies that emphasized student-instructor interaction as positively influencing students' academic engagement (Pham et al., 2021; Tuiloma et al., 2022).

Table 3. Distribution of Students according to their Academic Performance in Radiologic Pathology (N = 42)

Academic Performance	*f (%)*
Failed	2 (4.8%)
Passed	40 (95.2%)

A high proportion of respondents (95.2%), as shown in Table 3, obtained a passing grade in the Radiologic Pathology course while only 4.8% had a failing grade in the course. This indicates an excellent academic performance,

The shift to online classes had different effects on students' academic performance. In some studies, academic performance in medical and health-related science programs have improved as the students adjusted to new learning environments, utilized modules effectively, had teachers who employed remote teaching methods, and met different learning challenges amidst the pandemic (Fernandez-Altuna et al., 2021; Syed et al., 2021). In contrast, academic performance decreased in students enrolled in online classes, including those enrolled in medical and health-related programs (Abdull Mutalib et al., 2022; Kositanurit et al., 2022; Yun et al., 2022).

Despite the low number of students who failed, the failure rate is still notable because failure in the course prevents the students from enrolling in six important courses offered in the subsequent semester. Online education could be improved through interactive discussions, timely feedback, and regular academic consultations (Mahdy, 2020).

Table 4. Academic Performance Across Students' General Well-Being and Level of Online Course Engagement (N = 42)

Final Grade	GWBS* Level						SCEQ-M** Level					
	Severe Distress		Moderate Distress		Positive Well-being		Low		Moderate		High	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Failed	2	5.7%	0	0	0	0	1	14.3%	1	3.7%	0	0
Passed	33	94.3%	5	100.0%	2	100.0%	6	85.7%	26	96.3%	8	100.0%

* General Well-Being Schedule
** Student Course Engagement Questionnaire-Modified

As shown in Table 4, students who passed the course were experiencing moderate distress to positive well-being. Moreover, a significant proportion (94.3%) of those who experienced severe distress passed the subject. In comparison, only 2 (5.7%) failed, suggesting that students can still have good academic performance despite the severe distress they are experiencing. This contradicts previous research findings that showed low levels of well-being could result in poor academic performance (Baby et al., 2022; Grabel, 2017; Pompilus & Pompilus, 2021). Students were adapting to the changes in the delivery of instruction, managing school demands despite facing personal and social concerns, and still looking forward with great excitement to new learning experiences and becoming equipped in the field as they go through internship.

Students may have used different coping mechanisms to overcome the distress they were experiencing. Being spiritual was found to be used as a coping strategy by Filipino students. Other common coping strategies utilized were watching TV or videos, surfing the internet, allocating time

for relaxation, and setting healthy academic goals (Austria-Cruz, 2019; Martin et al., 2023). Students who obtained failing marks had low to moderate online engagement.

In contrast, most of those who passed had moderate online engagement, and all the students with high online engagement passed the course. The findings further support the argument that online engagement affects academic performance (Alshammari et al., 2017; Kuzminykh et al., 2021). Higher online engagement leads to higher academic performance.

A few (6, 85.7%) with low online engagement still passed the course. There could be different factors affecting their online engagement and academic performance. Motivation, for instance, is considered a mediating variable found in a relationship between online engagement and academic outcomes during the pandemic (Tran & Aspiras, 2022). Another possible reason is that the fear of failure and unmet expectations may have contributed to students' academic performance (Nsiah, 2017). In the Philippines where education is highly valued (Maligalig et al., 2010), students may have been pressured to strive hard and to pass the course without active engagement with other learners and teachers during online classes.

The results imply the need to increase students' academic engagement to spark their interest in learning and enhance their academic performance (Niemi, 2007).

IV. CONCLUSION

Based on the findings, all students who had high online engagement and most of those who had moderate online engagement passed the course. Some students, even with low engagement, also passed the course. A learning module is proposed, and a follow-up study is recommended to monitor the module's effectiveness. For future studies, the author recommends having more respondents and extending the study to include other disciplines.

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