

Undergraduate Students' Perceptions of Resilience Following a Physical Activity Course with Embedded Resilience Curriculum: A Qualitative Study

Renee Nicole Harrington¹

¹ Department of Health and Exercise Studies, North Carolina State University, Raleigh, NC, USA

Correspondence: Renee Harrington, Department of Health and Exercise Studies, North Carolina State University, 2611 Cates Avenue, 1175B Wellness and Recreation Center, Raleigh, N.C., 27695, USA. Tel: 1-631-697-1219. E-mail: rnharrin@ncsu.edu

Received: June 27, 2025

Accepted: July 22, 2025

Online Published: July 24, 2025

doi:10.5430/ijhe.v14n4p33

URL: <https://doi.org/10.5430/ijhe.v14n4p33>

Abstract

Resilience is increasingly recognized as a critical component of student well-being and academic success. Embedding resilience education within existing coursework may offer a promising avenue for fostering adaptive skills in emerging adults. This study explored undergraduate students' perceptions and experiences of resilience following their participation in a 15-week, two-credit physical activity course that included an embedded resilience curriculum. Thirty-two undergraduate students responded to five structured reflective prompts at the end of the semester. The reflections invited students to describe their evolving definition of resilience, identify surprising or impactful content, express curiosity about future learning topics, and highlight strategies they anticipated using beyond the course. Thematic analysis of the responses revealed that students' understanding of resilience evolved into a view of it as a multidimensional, learnable set of skills rooted in self-awareness, intentional practice, and holistic wellness. Students were particularly surprised by the influence of internal factors such as mindset, self-compassion, and cognitive patterns. They expressed interest in further exploring resilience in relation to social connection, community, and mental health. Key strategies identified for future use included mindfulness practices, emotional regulation, and time management. These findings highlight the effectiveness of integrating resilience education into higher education curricula and how such integration can foster self-reflective growth and equip students with practical strategies to support their long-term well-being. Implications for future research and program development are discussed.

Keywords: resiliency, wellness education, mindfulness, student well-being, higher education

1. Introduction

In an increasingly complex and demanding world, resilience has become a critical trait for maintaining mental well-being and overall health (World Health Organization, 2022). Often defined as the ability to adapt and thrive in the face of adversity, resilience plays a vital role in mitigating stress and overcoming life's challenges (American Psychological Association, 2025). This capacity is particularly important for undergraduate students who face mounting academic, social, and financial pressures, alongside growing rates of mental health concerns. Findings from the most recent American College Health Association-National College Health Assessment III Report highlight these concerns with students reporting stress (37.1%), anxiety (31.1%), sleep difficulties (21.8%), and depression (20.5%) as the most common impediments to academic performance (American College Health Association, 2024). In addition, over three-quarters of students reported moderate (50.8%) or high (26.8%) levels of overall stress and nearly half (49.3%) screened positive for loneliness (American College Health Association, 2024). Given these statistics, cultivating resiliency traits in this population is not only beneficial, but is essential.

Research shows that college students with higher levels of resilience experience fewer mental health issues, perform better academically, and navigate interpersonal challenges more effectively than their less-resilient peers (McDermott et al., 2020). Yet despite its importance, a recent review of global literature found 36% of undergraduate students have low levels of resilience (Chua et al., 2023). Therefore, it has been suggested that higher education

institutions consider including resilience education as part of undergraduate curriculum to prepare students for both academic demands and the transition to adulthood (Ang et al., 2022; Brewer et al., 2019). However, strategies for fostering resilience in a university setting remain underexplored. Emerging evidence suggests physical activity as a promising avenue for building resilience in university students (Xia et al., 2020) as regular movement has been linked to enhanced emotional regulation, self-confidence, problem-solving, positive thinking, communication, and stress management (Secer & Yildizhan, 2020; San Roman-Mata et al., 2020; Xu et al., 2021). Integrating resilience education into a required physical activity course presents a unique opportunity to holistically support students' mental, emotional, and physical well-being. This qualitative study examines the impact of a resilience-focused curriculum embedded within such a course.

Drawing on student reflections, the study explores undergraduate students' conceptualizations and lived experiences of resilience, identifies the most impactful elements of the curriculum, areas of curiosity for future learning, and investigates strategies students intend to apply beyond the course. By centering on student voices, this research offers practical insights into educational interventions that can foster emotional strength and psychological flexibility within undergraduate students. The study aims to inform future efforts to embed resilience-building strategies into higher education and contribute to a growing body of literature highlighting the need for student-centered, holistic approaches to curriculum design. Ultimately, these insights can help guide interventions and support systems that promote academic persistence and personal growth across diverse student populations.

2. Methods

2.1 Course Description

The two-credit hour undergraduate course titled 'Wellness and Resilience' integrates asynchronous weekly resilience topics with synchronous, in-person physical activity sessions and discussion. Students engage with lectures, readings, and experiential learning exercises to develop a personalized set of strategies and skills to support academic, social, and emotional success both during their time at the university and beyond. Resilience topics include foundations of resilience, dimensions of wellness, values and goals, mindfulness-based practices, cognitive reframing, time management, therapeutic lifestyle choices, amplifying positive emotions, cultivating a growth mindset, attention and awareness, developing interpersonal effectiveness skills, and creating a personal resilience plan. The course is also designed to teach and apply the principles of lifetime physical fitness utilizing the five major components: cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition. The components of fitness are met through structured individually paced aerobic and strength activities. Health and wellness topics include components of fitness, nutrition, stress management, injuries and prevention, and current health issues. The course meets the university GEP requirement for the category of Health and Exercise Studies and students can complete the course as graded or credit-only.

2.2 Procedures

Thirty-two undergraduate students self-selected to enroll in the course, which was offered Fall 2024. Each student completed a final paper, responding to five structured prompts: (1) How do you define resiliency now? How has your understanding changed since the beginning of the semester? (2) Which two resilience activities had the greatest impact on you? What made them meaningful or memorable? (3) Which resilience topic surprised you the most, and why? (4) Was there a topic you wish we had explored more deeply? What about it interested you? and (5) Which resilience topic do you think will be most useful to you going forward, and why? The purpose of the paper was to encourage critical reflection on key concepts, skills, and insights gained throughout the course and how these learnings could be applied to their personal, academic, and professional lives. The University Institutional Review Board determined that the study was exempt from IRB approval and granted a waiver of consent (IRB #27739).

2.3 Data Analysis

Qualitative methods were used to analyze students' perceptions, experiences, and opinions as expressed in their final papers, which were submitted via the course website hosted on the university's secure network. After submission, the papers were de-identified by removing student names. The analysis followed the principles of reflexive thematic analysis (Nowell et al., 2017), aiming to systematically identify recurring patterns and meaningful insights into how students engaged with and were impacted by the resilience-based curriculum (Corbin & Strauss, 2008).

A single, highly experienced and knowledgeable coder with extensive expertise in the research topic conducted all qualitative analysis. This decision was guided by several methodological considerations. The research questions were narrowly focused, and the coding scheme was conceptually grounded, clearly defined, and unambiguous. The coder began by thoroughly reading each paper to gain an overall understanding of the content. This was followed by open

coding to label text segments that aligned with the research questions. A well-developed codebook was created through an inductive review of a subset of transcripts and refined through pilot coding. For example, after coding three papers, the coder reviewed and revised code definitions to reduce conceptual overlap and improve consistency. Axial coding was used to organize open coding categories into related clusters to generate connections among them. During selective coding, these categories were further synthesized to identify central themes and construct explanatory relationship statements, which were then named and linked to existing literature. Throughout the coding and interpretation process, sentences that exemplified student responses to specific reflection prompts were retained in their original form whenever possible to preserve meaning and context.

Several strategies were employed to establish trustworthiness of the analysis (Nowell et al., 2017). Credibility was enhanced through prolonged engagement with the data and the use of reflexive journaling. Transferability was addressed by providing detailed descriptions of the research context and analytical process. Dependability was ensured through a maintained audit trail, including coding records and a step-by-step account of analytic procedures. Finally, confirmability was supported by transparent coding decisions and clear documentation of the emerging patterns and themes.

3. Results

3.1 Research Question 1: Definition of Resilience

Thematic analysis of student reflections on their definition of resilience at the end of the semester revealed the following themes: dynamic and learnable process, holistic and multidimensional, and personal and purposeful growth. These themes reflect an expanded, more nuanced understanding of resilience, shaped by exposure to course content and experiential activities.

3.1.1 Theme 1: Dynamic and Learnable Process

A central theme in student reflections was the redefinition of resilience from a fixed trait to a dynamic, developable skill. Early in the semester, many students associated resilience with toughness or the ability to endure hardship without showing weakness. As the course progressed, this view expanded to a more process-oriented understanding of resilience centered on adaptation, self-awareness, and growth. One student wrote, *“At the start of the semester, I would equate resiliency to just being ‘tough,’ but now I see it as a much more complex trait than that.”* Another echoed this sentiment, stating: *“Resilience is not something innate but a learned process - a set of skills and practices nurtured through time.”*

Students frequently described how they had previously assumed resilience was something people were either born with or not, but learned resilience is something that can be actively cultivated through consistent effort. As one student noted, *“Resilience is not something innate, but a learned process and a set of skills and practices nurtured through time.”* Another student reflected, *“I now realize that everybody has to grow their resilience to be able to overcome struggles... it's not just a personality trait; it's something you build.”*

Reflections also highlighted a shift toward proactive engagement with resilience. Rather than viewing it as a reactive response to adversity, students described it as an ongoing practice rooted in daily habits such as physical activity, mindfulness, positive self-talk, and establishing wellness routines. Phrases like “actively worked toward” and “practiced every day” were frequently used, underscoring the internalization of resilience as a life skill. One student explained that resilience *“should be actively worked towards in order to further develop healthy coping strategies... and they should be continuously built upon for continuous personal growth,”* which was echoed by another who wrote: *“Everyone should focus on resilience every day and practice it.”* This shift reflects a more proactive stance, as students acknowledged that resilience requires deliberate choices made over time. This growth-oriented view is aligned with the recognition that resilience can be studied, measured, and strengthened across different contexts.

3.1.2 Theme 2: Holistic and Multidimensional

Students frequently described resilience as “multidimensional,” “complex,” and “influencing all aspects of life.” This broadened perspective was accompanied by increased appreciation for the role of balance, routine, and self-care, noting that well-being across domains is interdependent. Students articulated that physical and mental well-being were not separate silos but interconnected components that mutually reinforce one another. As one student noted: *“Resilience is how well you take care of yourself on a daily basis, like ensuring your multiple dimensions of wellness are being cared for, so that you are more able to recover from a hard time.”*

Course content contributed to this shift as students referenced how lectures on nutrition, sleep, mindfulness, and emotional regulation contributed to this expanded understanding. One student shared, *“After learning about diet,*

emotions, and mental wellness, there is less stigma around taking enough time to care for your brain as you do the rest of the body.” Another emphasized, “It’s not just about mental toughness; it’s about maintaining routines that help you thrive.” This holistic framing positioned resilience as a dynamic, ongoing process rooted in the pursuit of overall wellness. Another student explained: “I’ve learned that to be resilient, it’s essential to consistently focus on improving your wellness, as it directly impacts your daily life.”

The course appeared to facilitate this transformation by inviting students to examine their own habits and challenge prior assumptions about what it means to be resilient. As one student summarized: “Resilience to me means facing challenges in a healthy way and continuing to work through them rather than shy away, with the main emphasis being on the healthy aspect.” Students acknowledged that resilience does not manifest solely in moments of crisis but is intertwined with everyday experiences and long-term well-being. One student wrote, “Resilience can manifest itself in our physical fitness and the level we push ourselves to our limits without backing down. On the other hand, our ability to handle the mental toll of life’s hardships also shows psychological resilience.”

3.1.3 Theme 3: Personal and Purposeful Growth

The third major theme reflected students’ shifting view of resilience as a personal, purpose-driven process of growth. Many described it as a dynamic, evolving aspect of identity shaped through ongoing reflection and intentional practice. One student wrote, “Being resilient means that I can manage stress and otherwise exhausting emotions during hard times and not become defeated by them.” Challenges were reframed not as setbacks, but as opportunities for learning, maturity, and self-awareness. One student expressed: “It’s okay to struggle and have fear that a task or goal will not be accomplished, but that shouldn’t stop you from actively trying to pursue your desire, because growth and success is not always linear and it takes patience.” This was echoed by another who stated “Originally, my definition of resilience used the words ‘push past.’ But now... I can see that we must be able to adjust and work alongside our struggles.”

Students frequently highlighted the importance of belief in one’s ability to overcome, coupled with intentional effort to grow and improve. One student wrote: “If you have the mindset ‘I am going to get this,’ I feel that is what resilience is all about.” Students also highlighted how developing resilience includes becoming more in tune with their individual needs and values. For some, this included setting healthy boundaries, improving self-talk, or redefining what it means to succeed. One student wrote, “I realized that practicing resilience should be a common experience for every individual, as it is not difficult to do, but it does require conscious effort.” Another noted, “it’s about thriving, not just surviving.” Ultimately, students came to see resilience as a lifelong, intentional practice rooted in purpose, reflection, and the ongoing pursuit of becoming more adaptable and whole. They described feeling more equipped, empowered, and committed to nurturing their capacity for adaptation and growth in both personal and academic settings.

3.2 Research Question 2: Most Impactful Resilience Activities

Thematic analysis of student reflections on the most impactful resilience activities revealed the following themes: mindfulness and mental wellness, self-reflection and awareness, and time management. These findings reflect how resilience can be strengthened through a combination of mental shifts, physical care, and intentional organization.

3.2.1 Theme 4: Mindfulness and Mental Wellness

Mindfulness emerged as a frequently cited and impactful resilience-building activity. Students described practices such as meditation, breathing exercises, yoga, and grounding techniques as essential tools for managing stress and how these strategies helped them remain calm and refocus their minds during periods of emotional or academic overwhelm. One student noted: “When I start to feel anxious or overwhelmed, I do the 5-4-3-2-1 grounding technique and the S.T.O.P method... It allows me to take a deep breath and center myself in the present moment.” This was echoed by another student: “Practicing mindfulness has helped me notice when I am having racing thoughts and allowed me to practice not reacting right away.” Many students reported incorporating mindfulness into their daily routines for mental health. One shared, “Square breathing had a great impact on my mental well-being... I incorporated it into my daily routine to combat external stressors.” This was echoed by another student who stated: “This activity helped me develop better emotional regulation and stress management skills. By practicing mindfulness, I learned to observe my thoughts and feelings without judgment.” Yoga was also described as a powerful practice for restoring mental focus and easing anxiety. As one student reflected: “Yoga has helped me cope with anxiety. It was a great way for me to clear my mind when it was cluttered with stress and filled with the tasks of the day. It allowed me to decompress through providing a relaxed state, where I could also implement some of my meditation techniques.” Overall, mindfulness practices were seen as foundational not only for stress relief, but

for cultivating emotional resilience and self-regulation across academic and personal settings.

3.2.2 Theme 5: Self-Reflection and Personal Awareness

A second key theme was the role of self-reflection in fostering resilience. Students engaged in exercises such as resilience self-assessment, values clarification, and mindset reflection, which prompted them to take a deeper look at their internal experiences, strengths, and growth areas. These reflective practices helped students gain clarity on how they respond to adversity and where they might intentionally develop new coping strategies. As one student noted, *"The resilience self-assessment helped me be honest with myself and realize where I am falling short on bettering myself or just being there for myself in a basic manner."* Students described how reflective practices promoted greater self-awareness and self-compassion, enabling mindset shifts and goal setting. One student shared: *"This exercise really opened my eyes to how I view myself and how my internal dialogue shapes my perception. By recognizing these patterns, I'm starting to shift them."* These practices also opened the door to compassionate self-evaluation: *"That also helped me realize some things about myself in an honest and non-negative way... realizing I want more for myself has helped me initiate starting to think more positively about myself and my abilities."*

The values clarification exercise was particularly impactful, helping students reconnect with their core priorities. One reflected, *"This allowed me to slow down and reflect on my core values, which directly influenced how I approach challenges."* Reflecting on values also helped students realign with their priorities and purpose as one student noted: *"It made myself hone in on important values that mean the most to me... being able to recognize your values and goals and prioritize them will set yourself up for success."* This theme emphasizes the importance of introspection in resilience development, as students who engaged in self-reflection were able to align their actions with their values, which enhanced their ability to navigate adversity with confidence and purpose.

3.2.3 Theme 6: Time Management

Reflections noted how structured time management strategies helped students' resilience by enhancing organization, reducing stress, and fostering a sense of control. Activities such as time blocking, time logs, and SMART goal setting were described as transformative for developing self-discipline and minimizing procrastination. One student reflected on the realization sparked by tracking their daily habits: *"Filling out that time log... made me aware of how much time I really do spend on my phone... It helped me notice I was using my time inefficiently and gave me a sense of control over my day."* Some students reported dramatic realizations that emerged from this honest self-tracking: *"Being able to hold myself accountable to filling out a schedule/chart honestly... made me realize how much I depend on technology, which I was roughly on my computer and phone for 24 hours that week."* This clarity enabled students to follow through more confidently, which in turn boosted motivation and reduced stress: *"The Time Management Log allowed me to see how I spend all of my time throughout a week, which gave me a visual representation of how I choose to spend all my time day by day. This allowed me to see which activities were good and bad uses of my time, which reduced my stress levels and made me more productive."* SMART goals, in particular, helped translate vague ambitions into concrete, achievable steps: *"Writing the SMART goal helped me realize how attainable my goal could be if I plan it out."* Overall, this narrative reflects the importance of structured time management in mitigating stress, enhancing productivity, and ultimately strengthening resilience. Students who engaged with these time management strategies reported feeling more in control of their schedules, which led to greater mental clarity and a reduced sense of overwhelm.

3.3 Research Question 3: Most Surprising Resilience Topic

Thematic analysis of students' reflections on which resilience topic was the most surprising revealed five core themes: mental aspects of resilience, role of self-compassion and self-care, power of thought patterns, dimensions of wellness, and social connection. These findings underscore the broad and evolving nature of resilience, encompassing mental, emotional, physical, and social components.

3.3.1 Theme 7: Mental Aspects of Resilience

Many students were most surprised to learn how significantly mindset shapes resilience, particularly through growth mindset and cognitive flexibility. Prior to the course, many students primarily associated resilience with external behaviors or emotional toughness rather than internal cognitive patterns. As one student noted, *"I never really considered the mental aspect of resilience... being able to have a strong mindset to positively and maturely deal with an issue is one of the most important traits for someone to possess."* Another echoed this shift in perspective: *"I was unaware of how powerful your mindset could change the way you behave. I became aware of how I had many negative thought patterns I was practicing and how they affected my habits."*

Many students also began to recognize and name specific thought patterns that hinder resilience: *“Discovering how negative thought patterns, such as catastrophizing or all-or-nothing thinking, can hinder resilience was eye-opening.”* Others highlighted how the course helped them understand the science behind mindset shifts: *“I never realized that it was scientific, and you truly could change the way your brain handles situations and obstacles by altering the thought patterns and the way we go over topics in our head to learn how to adapt to and overcome these situations”* and *“Learning that our brains, when being told these positive affirmations, will look for evidence in our lives to make that be true – basically performing confirmation bias, has taught me the true power of positive affirmations.”*

The reflective activities and practical application of these insights were described as pivotal in helping students internalize these insights. One student commented, *“I found the mindset reflection to be surprising because the assignment asked to reflect on a time when you displayed a fixed mindset and a growth mindset in the past week. Additionally, I was asked how I could display a growth mindset more often. This assignment caught me off guard because I had to take the information I learned and apply it to situations from my previous week. It made me realize I demonstrate a fixed mindset in many situations. I had become aware of how I approach situations and how I should approach them with a growth mindset. I enjoyed this activity because it allowed me to change my perspective within my everyday schedule.”* Another observed, *“Learning that our brains, when being told these positive affirmations, will look for evidence in our lives to make that be true – basically performing confirmation bias, has taught me the true power of positive affirmations.”* Reflections such as this demonstrate a growing awareness that resilience is influenced by adaptability, mindset, and the capacity to shift one’s thinking in the face of adversity. This evolving understanding is foundational to building more sustainable and science-informed approaches to personal resilience.

3.3.2 Theme 8: Role of Self-Compassion and Self-Care

Self-compassion and self-care emerged as unexpected, yet essential components of resilience for many students. Initially, perceived as secondary or even contradictory to resilience, these practices were reframed as foundational to managing stress and sustaining well-being. However, through both the theoretical content and experiential activities, many students began to reframe self-compassion as a foundational tool for managing stress, promoting recovery, and sustaining long-term well-being. One student captured this shift clearly: *“I used to view self-care as an antagonist to resilience, but I now realize that it is absolutely necessary in fortifying resilience.”* Many students highlighted that practicing self-compassion was not only essential for well-being, but also directly enhanced their ability to manage stress and overcome setbacks. One student reflected, *“That self-compassion reduces stress, improves problem-solving ability, and promotes better well-being was an unexpected, although plausible, revelation.”*

The necessity of caring for oneself to care for others was an insight for many. As one student explained, *“The analogy of putting your oxygen mask on first before helping others around you in the case of an emergency really does put in perspective how important self-care is, and that you need to help yourself before helping others.”* Another noted how regular self-care practices contribute to both personal resilience and relational health: *“Implementing regular self-care will simultaneously better prepare myself to handle hardships and create stronger bonds with my friends and family.”*

Many students also came to appreciate the emotional strength found in self-kindness. One remarked, *“I had not realized the power of treating oneself with much kindness during periods of difficulty.”* Many also connected this self-kindness with mindset-related themes explored in earlier modules. As one student summarized, *“After learning concepts such as having a growth mindset and developing self-compassion, I realized the grand effect one’s mindset has on their ability to become resilient.”* Students’ shift in perspective demonstrates the powerful connection between emotional care and resilience, where maintaining one’s well-being through kindness and self-awareness is integral to sustained personal growth.

3.3.3 Theme 9: Power of Thought Patterns

Students frequently described the transformative impact of positive self-talk and cognitive reframing on their resilience. Many were surprised to learn how deeply internal narratives shaped their ability to cope with adversity. The course content and reflective exercises helped students to understand the foundation of these cognitive strategies. As one student insightfully shared, *“I never realized that it was scientific, and you truly could change the way your brain handles situations and obstacles by altering the thought patterns and the way we go over topics in our head to learn how to adapt to and overcome these situations.”* This understanding of neuroplasticity and the power of intentional thought patterns gave students not only new knowledge, but also a sense of agency over their mental and emotional responses. For many, the process began with recognizing their own habitual negative thought patterns, often previously unnoticed. One student noted, *“I became aware of how I had many negative thought patterns I was practicing and how they affected my habits.”* These realizations opened the door to practicing more intentional and

constructive forms of self-talk, with tangible effects. As another student enthusiastically put it, *“Positive self-talk and daily affirmations can truly help you change your day, your week, your month, your year, and potentially even your life.”* The shift toward intentional, positive self-talk was particularly impactful, with one student expressing how drastically their mindset changed once they began to practice it: *“Once I realized that I was thinking so poorly of myself and speaking to myself very negatively, once I learned the importance of this topic, my mindset drastically changed. I practiced positive self-talk, and it made me more confident and more self-reliant.”* For students like this, positive self-talk became a tool for greater confidence, emotional resilience, and feeling of control over how they respond to life’s difficulties. Ultimately, these reflections highlighted how changing internal dialogue not only improved mindset but also enhanced emotional regulation and self-efficacy, reinforcing that resilience is as much mental as it is behavioral.

3.3.4 Theme 10: Dimensions of Wellness

The idea that wellness is multi-dimensional was new for many students. Prior to the course, wellness was often narrowly viewed through the lens of physical health or fitness. However, as students engaged with course materials and reflective activities, they began to appreciate that true resilience draws upon the integration of physical, mental, emotional, and social well-being. As one student reflected, *“Wellness has many more components than just physicality,”* capturing the shift from a limited to a more holistic view. Others expressed surprise at the breadth and interconnection of wellness domains. One student noted, *“I was surprised about how many different aspects there are to somebody’s overall wellness,”* while another explained, *“Practicing all dimensions is essentially a guideline to success and setting up one’s general well-being to be successful.”* One student simply noted, *“I was surprised about how many different aspects there are to somebody’s overall wellness,”* highlighting a broader awareness that emerged from the course. These reflections suggest that students began to see well-being as an interconnected system, where neglecting one area can weaken overall resilience. Conversely, investing in multiple dimensions creates a strong foundation for sustainable well-being and adaptability.

This expanded perspective helped students recognize the value of integrating practices such as mindfulness, physical activity, and emotional regulation to support their resilience. Several students described applying these techniques in real-life situations. One student shared, *“One of the examples was ‘square breathing’, this involved the pattern of breathing following intervals of four and mentally tracing out the shape of our breathing as a square. I have subconsciously used this method of breathing when I am stressed out, normally during my exams.”* They added, *“While I am a visual learner, a major way I can do this is by creating lists, which implementing the 5-4-3-2-1 technique allows me to stop and implement understanding and viewing my surroundings.”* This kind of insight highlights not only the effectiveness of specific tools, but also how students personalized their strategies to align with their learning preferences. Lessons on stress management also deepened their understanding of the physiological impacts of stress. One student admitted, *“I was unfamiliar with the multitude of factors that contribute to stress and the physiological processes associated with stress. The lesson went very in depth with the anatomical and physiological aspects of stress, all of which was new information and very interesting to learn more about.”* These insights underscore the importance of a holistic approach to resilience, where managing stress and maintaining well-being require attention to both body and mind. By exploring how stress affects multiple dimensions of wellness (e.g., physical health through increased heart rate and tension, emotional well-being through anxiety or mood changes, social wellness through strained relationships), students gained a deeper appreciation for the interconnectedness of these domains.

3.3.5 Theme 11: Social Connection

Many students were surprised to learn how substantially relationships shape resilience. Social support, often overlooked in discussions of inner strength, emerged as a key insight. Many noted how meaningful connections helped them feel less isolated and more grounded, emotionally regulated, and capable of managing stress. One student reflected, *“An interesting observation I made was that the longer I go without hanging out with friends or making a point to socialize with anyone for that matter, the more disconnected I feel from society itself. The opposite thankfully held true as well, where the more often I surrounded myself with close people in my life, the better I felt overall and I had a better state of mind.”* Another student echoed this, sharing that *“Implementing regular self-care will simultaneously better prepare myself to handle hardships and create stronger bonds with my friends and family,”* highlighting the intertwined role of self-care and social connection. Students also expressed surprise at the commonality of emotional struggles and the comfort found in shared experience. As one student noted, *“I feel like the surprising part was realizing how common it is and that I am not alone in feeling these kinds of emotions.”* In addition to recognizing the value of connection, students began to see interpersonal skills as essential tools for

resilience. One student noted, *“I didn’t realize that even something as important as these skills was a part of the resilience techniques that go along with you in life. They will especially be helpful when I become someone involved in the industry while representing myself and displaying an entertaining and likable character.”* These reflections underscore the importance of social support as a critical element of resilience. The course helped students recognize that supportive connections as essential, alongside practices like self-care, in sustaining long-term resilience.

3.4 Research Question 4: Resilience Topic to Explore Further

Thematic analysis of students’ reflections on what they wanted to explore further about resilience revealed several common themes: social connections, mental and physical health, practical everyday skills, and cognitive and emotional strategies. These highlight students’ desire for further exploration of resilience through self-awareness, mental health practices, social connections, and actionable strategies.

3.4.1 Theme 12: Social Connection

Students frequently expressed interest in the role of social connection and community support in building resilience. Many recognized that resilience is not solely internal but shaped by relationships and environments. In an age of digital isolation, students expressed a desire to better understand how to cultivate meaningful human connection, particularly during stressful times. One student shared, *“As we age further into the world of technology and AI, human interaction is becoming less and less apparent in our everyday lives, so I feel like learning how to work through friendships and relationships when faced with challenges would be a valuable skill.”* Another noted: *“Relationships are such core parts of our lives. Understanding how to tap them during challenging times could enrich my learning experience.”* Reflections also highlighted a desire to explore how support systems act as protective factors and how sustaining those connections requires intentional effort. One student remarked, *“When facing challenges, having people around you who can offer support is so important. I believe that understanding how to build resilient communities would help me not just in my personal life, but also in my future career.”* Another echoed this sentiment, noting, *“Resilience is often framed as an individual trait, but I believe that much of our ability to thrive in the face of adversity is shaped by the communities we are part of.”* Students increasingly viewed resilience as a relational and collective process. One observed, *“Understanding the specific ways in which community networks provide support and how these can be strengthened, would be valuable for applying resiliency concepts in broader social areas.”* These reflections point to a growing awareness that emotional well-being is not only enhanced by interpersonal relationships, but can be scaled through strong, intentional community ties. As one student described: *“A deeper exploration into how communities can build collective resilience would have been valuable.”* While another noted: *“Learning more about how to cultivate and continue meaningful relationships in the face of adversity is something that all people can learn more about.”* Together, these insights demonstrate students’ evolving understanding of resilience from a personal attribute to a socially embedded, community-sustained process. They expressed eagerness to apply these concepts beyond the classroom, in their careers, relationships, and broader social contexts.

3.4.2 Theme 13: Mental and Physical Health

Another prominent area of interest involved a desire to better understand how mental and physical health practices contribute to resilience. Students specifically expressed interest in learning more about stress management, anxiety, and the connection between nutrition and mental wellness. For example, one student noted their curiosity about the impact of nutrition on resilience, saying, *“I’m curious about specific nutrients or dietary patterns that might enhance mental and physical resilience.”* Others shared more personal reflections on the challenges of maintaining healthy habits during stressful times. One student admitted, *“I find myself struggling to eat healthy every day when I am stressed because of how enjoyable fast food is to eat,”* while another emphasized the empowering role of nutritional knowledge: *“By understanding how to create nutritious meals, you can ensure that your body receives the essential vitamins [and] minerals it needs to function optimally. This knowledge can help you to make informed dietary choices, helping you maintain a balanced diet that supports your physical activities and fitness routines.”*

The importance of managing mental health, especially in preventing burnout, was also a significant area of interest. As one student described, *“Burnout is often caused by excessive workload and lack of work-life balance... understanding how to prevent burnout would help me manage stress and prioritize self-care.”* As one student expressed, *“I wish we learned more about how to hold ourselves mentally accountable without the feeling of underlying guilt.”* In addition, students reflected on the emotional side of behavior change. As one noted, *“I wish we learned more about how to hold ourselves mentally accountable without the feeling of underlying guilt.”* These comments illustrate a growing appreciation for holistic approaches to health, where taking care of the body through proper rest, movement, and nutrition is understood as a key component of mental resilience.

3.4.3 Theme 14: Practical Everyday Skills

Students expressed strong interest in learning more practical tools and everyday strategies to support resilience in real-world situations. Time management, goal setting, and meditation were mentioned as areas where students wanted additional guidance and experience. For many, these practical skills were seen as essential but often underexplored in academic settings. Students expressed a desire for more structure and reinforcement to help develop habits that support long-term resilience. The idea of incorporating these practices into coursework was especially appealing. As one student noted, *"I believe that if we (students) had to do it for an assignment or one of the homework labs, it would either teach students (and me) about it or remind them of the hidden significance of meditation."* Another student suggested, *"Time management and goal setting with more information or self-help guides starting at a base or low level would have been helpful."*

Students also emphasized the importance of learning to manage stress effectively and expressed interest in applying resilience tools to academic life. One student shared, *"I am not very good at managing my stress and learning even more practices on how to manage that I feel would help and benefit me so much in the future."* Another reflected on the value of integrating resilience strategies with academic responsibilities, stating, *"Methods to ensure that you are being the most successful and healthy student when it comes to studying and going over schoolwork while also staying happy/enthusiastic"* would be especially useful. Others were interested in exploring how resilience can be strengthened even amid ongoing challenges, with one student asking how we can *"continue building resiliency even with the issues we already have at hand."*

Beyond academic skills, students also saw the potential in everyday experiences and personal interests. One student highlighted the role of hobbies: *"We learned a lot about new techniques to grow resiliency, but I think another approach that could build positivity, and further resiliency could be to expand hobbies or interests we already have... we can build resilience by turning to these hobbies in times of trouble for comfort and peace in a productive way."* Another student wondered about the subtler influences on mental resilience, expressing curiosity about *"if anything may be obscure, like the music we listen to or the language we use, that relates to how we think and if there are ways to become a healthier thinker."* These responses reveal students' desire for accessible, repeatable strategies to incorporate into everyday routines to build confidence, structure, and emotional stamina over time.

3.4.4 Theme 15: Cognitive and Emotional Strategies

Students expressed strong interest in learning more about enhancing cognitive and emotional resilience through mindset shifts and emotional self-regulation, particularly how their internal dialogue shapes external responses and how greater self-awareness could empower them to navigate difficult moments with clarity and confidence. One student wrote, *"I love learning about more ways I can rewire my brain when I am thinking negatively."* Students recognized that thought patterns and emotional responses can either reinforce stress or support growth and viewed cognitive reframing and emotional insight as learnable skills rather than innate traits, with one reflecting: *"Learning more about self-awareness would allow me to be more emotionally mature and begin to understand the importance of how it is to know more about yourself."*

This interest was closely tied to growing concerns about burnout and the challenge of applying resilience strategies while already under strain. One student explained, *"Once you are near or in burnout it is hard to start routines or add more to your plate, even if these additions are helpful for you because it already feels like too much is going on that you need to take care of. More information or self-help guides starting at a base or low level would have been helpful."* Another elaborated, *"Burnout is often caused by excessive workload and lack of work-life balance which can lead to one feeling physically and mentally exhausted and lacking motivation. By being able to understand how to prevent burnout, students like me can take the proactive steps to managing their stress, setting healthy boundaries, and prioritizing self-care (to an extent, you still have responsibilities), so they can continue to perform effectively in their personal and academic life without compromising their health."* Together, these reflections highlight students' desire not only for self-awareness strategies, but also for accessible, proactive tools that help them apply resilience-building practices before stress becomes overwhelming.

3.5 Research Question 5: Most Useful Resilience Topic

Thematic analysis of students' reflections on what resiliency topic will be most helpful in the future revealed the following themes: emotional regulation, growth mindset, managing time and stress, and physical health and wellness. These themes highlight the broad spectrum of resilience topics that students believe will play crucial roles in helping them navigate future challenges.

3.5.1 Theme 16: Emotional Regulation

Many students identified mindfulness practices and emotional regulation strategies as among the most helpful tools they would carry into the future, highlighting a shift toward proactive and intentional coping mechanisms. These techniques were seen as crucial for navigating both personal and professional challenges, particularly during high-stress or emotionally charged situations where maintaining composure and clarity is essential. One student shared, *“emotional regulation will be particularly important for me as I move forward in my personal and professional life,”* signaling an awareness that the ability to manage one’s emotional responses can influence interpersonal dynamics, workplace performance, and long-term well-being. Another noted, *“mindfulness has become a big part of who I am because it lessens my anxiety and strengthens my health,”* illustrating how the regular practice of present-moment awareness contributes to both mental clarity and physical resilience.

In addition to these strategies, several students emphasized the value of cognitive reframing and mindset shifts as powerful tools for emotional growth. One student reflected, *“I love learning about more ways I can rewire my brain when I am thinking negatively,”* revealing a metacognitive approach to managing thought patterns and cultivating a more adaptive internal dialogue. Another underscored the role of self-awareness in emotional growth, stating, *“Learning more about this would allow me to be more emotionally mature and begin to understand the importance of how it is to know more about yourself to better portray yourself to people.”* These insights point to a broader understanding that resilience is not merely a reaction to difficulty, but a process rooted in self-knowledge and emotional intelligence. As one student succinctly put it, *“Keep your emotions in check in the midst of high-pressure situations.”* Collectively, these reflections reveal a growing recognition that resilience is not just about reacting to adversity; rather, emotional balance, self-awareness, and cognitive flexibility are essential components of maintaining resilience under stress.

3.5.2 Theme 17: Growth Mindset

A recurring theme in students’ reflections was the value of embracing a growth mindset and developing cognitive flexibility to support long-term resilience. Many students described how learning to reframe challenges and approach uncertainty constructively helped shift their perspective on setbacks. They began to see obstacles not as threats, but as opportunities for learning and personal development. As one noted, *“Through further use of my growth mindset, I can reduce my fear of these upcoming challenges and fear of the unknown,”* illustrating how this mindset helped ease anxiety about future uncertainties. Many noted a clear connection between mindset and overall well-being with one sharing, *“Developing a growth mindset will remind me of how important it is to avoid a fixed mindset when it comes to the challenges of life and how much a growth mindset really benefits so many different things in your life for the long term.”*

Others emphasized how this mindset promotes persistence and self-belief. Students recognized that setbacks are part of the journey and that consistent effort plays a critical role in reaching long-term goals. One student noted, *“A growth mindset will help me understand failure is normal and that if I keep working towards my goals, I will be able to reach them with enough hard work.”* Similarly, another student remarked on the transformative power of adaptive thinking: *“Learning how to reframe negative situations and approach challenges with a growth mindset has given me ways to deal constructively with setbacks.”* These responses highlight students’ recognition of the role mindset plays in shaping resilience and coping strategies in the face of adversity.

3.5.3 Theme 18: Managing Time and Stress

Facing growing personal and professional demands, many expressed the need for strategies that create structure and reduce stress. Time management emerged as a recurring topic, with students recognizing how better organization could positively impact both productivity and well-being. One student reflected, *“I believe changing my time management habits will help me become the best version of myself.”* Another reflected on increased awareness of unproductive habits through reflective activities, saying, *“The time management activity really helped me understand how much time during the day I spend scrolling through social media or being lazy while I could be doing something more productive to benefit my wellness.”*

Students also emphasized the importance of managing stress through grounding and mindfulness, with one sharing, *“Whenever I am put into a stressful situation, I tend to either try and push it away or distract myself which is never helpful. Using the exercises I learned and talked about previously, I can ground myself and change my mindset in a positive way.”* Learning techniques like mindfulness and finding ways to reduce stress through exercise were seen as essential tools for maintaining balance. As one student reflected, *“These skills will not only help me at work but will also help me in my personal life when things get tough. Having these tools will allow me to handle whatever comes*

my way, both professionally and personally.” Many students recognized that high-stress levels can impair focus, decision-making, and physical performance, making effective stress management critical to overall emotional health. One student noted: “Whether it was learning about stress management, mindfulness-based practices, time management, or physical fitness, all of the activities we did in class taught me more about resilience and the ways I can incorporate it more into my life. Resiliency is something that I will continue to prioritize and work towards in the future thanks to this class.”

3.5.4 Theme 19: Physical Health and Wellness

The final theme highlighted the essential role of physical health, nutrition, and daily routines in sustaining resilience. Students recognized that a healthy body supports a resilient mindset. Many reflected on how physical activity, consistent routines, and intentional self-care practices contribute to emotional regulation, clarity of thought, and long-term endurance. One shared, *“Engaging in regular strength training has taught me discipline, perseverance, and the importance of setting and achieving goals. These lessons will be valuable as I navigate future challenges both personal and professional, by reinforcing the connection between physical health and overall resilience.”* This reflection suggests that consistent movement habits do more than improve fitness, they instill resilience-building traits that extend into academic, personal, and professional challenges.

Mindfulness practices, such as gratitude and reflection, were also seen as important complements to physical activity. One student explained how these tools helped them manage everyday stressors and remain grounded: *“These practices will give me more gratitude and make me a more grounded person... and make me become even more connected to the present.”* Students increasingly saw these routines as a way to stay mentally balanced and emotionally centered, especially when external pressures arise.

Nutrition and recovery also gained new importance. For many, this recognition included a newfound appreciation for the impact of food, rest, and movement on emotional regulation and mental clarity, with one student noting, *“I always feel better when I eat cleaner.”* This awareness encouraged students to apply classroom concepts to real-world habits, such as cooking more meals or prioritizing sleep.

Several students emphasized the holistic nature of wellness, with one stating, *“The resilience topic that I believe will prove the most helpful for me in the future would definitely be wellness in general, since it takes a holistic approach to our quality of life. Without this aspect positively fulfilled to some extent, I don’t think anything else matters.”* This recognition prompted several students to begin planning practical ways to integrate wellness into their daily lives. One described mapping out how to maintain balance as a college student, writing, *“I began to plan how I was going to maintain these areas and implement a well-rounded lifestyle into my routine as a college student. I am so grateful for learning about it in our class as it added depth into my life.”* Ultimately, students recognized that building resilience is not about focusing on one aspect of health in isolation. As one student noted, *“Building my mental stability through health and fitness is a powerful way to prepare myself for future challenges, both physically and mentally.”* Collectively, these reflections indicate that students view physical well-being as foundational to their future resilience, recognizing the interconnectedness of physical health, mental stability, and overall well-being.

4. Discussion

The present study examined undergraduate students’ experiences with a resilience-focused curriculum embedded within a required physical activity course. Thematic analysis of student reflections revealed several key themes illustrating how students conceptualize resilience, which aspects of the curriculum were most impactful, curiosity about future learning topics, and which strategies they intend to apply beyond the course. Collectively, these themes indicate that students are concluding the course with an enhanced conceptual understanding of resilience, accompanied by a set of intentional, evidence-informed strategies ranging from cognitive reframing and mindfulness to time management and health promoting behaviors that can support sustained well-being, personal growth, and adaptive functioning in the face of ongoing life challenges.

Through engagement with resilience-building activities throughout the semester, students demonstrated an evolving understanding of resilience as a multifaceted and dynamic process. Many students shifted from viewing resilience solely as the ability to “bounce back” from adversity to recognizing it as a learnable set of skills encompassing mental, emotional, physical, and social dimensions. This aligns with recent research noting that adaptability plays a key role in developing resilience to manage unexpected and stressful challenges (Farco et al., 2022). A prominent theme in student reflections was the significance of mindset, particularly adoption of a growth mindset, in fostering resilience. Many students described how reframing their internal narratives helped them approach challenges with greater optimism and confidence. This reinforces the idea that resilience is closely tied to how individuals interpret

and respond to adversity and supports the Positive Appraisal Style Theory of Resilience (Kalisch et al., 2015). This theory emphasizes that individuals who consistently interpret potential stressors in a non-negative way are better equipped to handle adversity and have greater resiliency (Kalisch et al., 2015). This aligns with the broader resilience literature, which emphasizes cognitive and emotional flexibility as central to resilient functioning (Yousefi & Hasani, 2022; Nakhostin-Khayyat et al., 2024). Recent research has revealed a significant positive relationship between self-regulation, cognitive flexibility, and resilience in students. The interrelated nature of these constructs where strengthening one could potentially enhance the others highlights the importance of initiatives that foster these types of practices educational settings (Nakhostin-Khayyat et al., 2024).

Self-compassion and emotional regulation also emerged as critical components in mitigating stress and promoting well-being. Many noted that treating themselves with kindness during difficult times was a novel yet impactful strategy. This observation is supported by research demonstrating that self-compassion is positively associated with psychological resilience, adaptive coping mechanisms, and improved mental health (Li et al., 2024; Neff, 2013; Ewert et al., 2021). By the end of the course, many noted a deepening understanding of emotional regulation as a skill they can cultivate, a perspective consistent with contemporary resilience research (Gross, 2015). Stress management featured prominently in students' responses, with many indicating that learning to regulate stress would be essential for their future resilience. The importance of mindfulness-based practices in stress reduction was emphasized by students, who noted how these techniques helped them cope with daily pressures and fostered a sense of balance. This is consistent with recent studies that suggest mindfulness-based practices can play a significant role in enhancing emotional regulation and building long-term resilience and enhanced mental health (Yavuz Sercekman, 2024; Oh et al., 2022; Yasmeen et al., 2024). Furthermore, students expressed a desire to continue developing skills related to stress management, suggesting that they recognize the need for ongoing self-care and emotional regulation in their personal and professional lives.

The concept of community resilience emerged as a significant theme, with several students expressing interest in understanding how social connections and support networks enhance individual resilience. Many noted the role that supportive relationships play in building resilience and expressed a desire to learn strategies for cultivating these connections during times of adversity. The well-documented role of communities in shaping individual resilience reflects a growing student awareness of resilience as a collective, rather than solely individual, process (Dinse 2024; Southwick et al., 2016). This perspective aligns with research highlighting the protective function of social support networks in promoting both individual and community resilience and how low levels of social support have been linked to adverse health outcomes (Ozbay et al., 2007).

The curriculum's practical applications were particularly salient. Students highlighted skills such as time management, stress management, and establishing health-promoting routines (e.g., sleep, nutrition, physical activity) as essential tools for sustaining resilience. These topics were mentioned across various research questions, suggesting that students viewed them as essential for maintaining resilience in both personal and academic domains. There was a clear interest in strategies that would help them navigate the increasing demands of life, such as balancing academic workloads, work-life balance, and personal health. The integration of these skills into daily life reflects a shift toward a more holistic approach to resilience, where emotional, social, and physical well-being are all considered crucial for long-term success (Skerrett, 2019). Students frequently mentioned the importance of time management, goal setting, and healthy routines in sustaining resilience. They recognized that balancing academic, personal, and social responsibilities requires intentional strategies. The strong desire for practical tools to apply resilience concepts in real-world situations indicates that while students appreciated the theoretical understanding of resilience, they were also seeking concrete strategies to integrate into their daily lives, reinforcing the notion that resilience is a practice rather than an innate trait (Daly, 2020).

Grounded in student perspectives, the findings indicate that students concluded the course with a more nuanced understanding of resilience and a practical set of strategies to support ongoing personal and academic development. These strategies include cognitive reframing, mindfulness, emotional regulation, and behavior-oriented approaches such as time management, habit formation, and stress management. The findings offer actionable insights for higher education institutions seeking to embed resilience-building within curricular frameworks aimed at promoting mental well-being and academic success. This study contributes to a growing body of literature advocating for the integration of resilience education in higher education, particularly through experiential, reflective, and student-centered pedagogical approaches.

5. Limitations and Future Research

While this study provides valuable insights into students' perceptions and growth related to resilience, several limitations must be considered. First, the data collected is based on self-reported responses, which may be influenced by personal biases or social desirability, potentially affecting the accuracy of students' reflections on their resilience. Additionally, the study's sample size and scope were limited to a specific cohort of students, which may not fully represent the diverse perspectives and experiences of the broader student population. A further limitation of this study is the use of a single coder for qualitative analysis, which may introduce potential bias due to individual interpretation, despite efforts to enhance rigor through use of a well-developed codebook and strategies to establish trustworthiness of the analysis.

Future research would benefit from larger and more diverse samples, including students from varied educational levels and backgrounds, to better understand resilience across various contexts. Longitudinal studies tracking changes in resilience over time could provide deeper insights into how students' resilience evolves beyond the classroom setting and how they apply resilience strategies in real-world situations. Additionally, investigating the effects of specific resilience-building interventions on students' mental health and academic performance could further clarify the practical benefits of resilience training. Lastly, examining how student characteristics (e.g., sex, psychological status, and exposure to physical education) influence preferences for course content and resilience development would be valuable.

6. Conclusion

The findings of this study indicate that students increasingly recognized resilience as a holistic construct, encompassing emotional regulation, growth mindset, stress and time management, and physical wellness. These themes reflect both personal development during the course and students' perceptions of the skills essential for future success. These results have important implications for curriculum design, underscoring the value of integrating practical, evidence-informed strategies to foster resilience in real-world contexts. University resilience-building programs and initiatives may benefit from incorporating more targeted interventions focused on emotional regulation, social connection, and applied stress management techniques. By aligning curricular content with students' evolving needs, educators and campus well-being initiatives can more effectively support the development of resilient, adaptable graduates equipped to navigate future challenges.

References

- Ahmady, S., Khajeali, N., Kalantarion, M., Sharifi, F., & Yaseri, M. (2021). Relation between stress, time management, and academic achievement in preclinical medical education: A systematic review and meta-analysis. *Journal of education and health promotion*, 10, 32. https://doi.org/10.4103/jehp.jehp_600_20
- American College Health Association. (2024). *American College Health Association-National College Health Assessment III: Reference Group Executive Summary Spring 2023*. American College Health Association.
- American Psychological Association. Resilience. (cited March 11, 2025). Available from: <https://dictionary.apa.org/resilience>
- Ang, W.H., Lau, S.T., Cheng, L.J., Chew, H.S., Tan, J.H., Shorey, S., & Lau, Y. (2022). Effectiveness of resilience interventions for higher education students: A meta-analysis and metaregression. *Journal of Educational Psychology*, 114, 1670-1694. <https://doi.org/10.1037/edu0000719>
- Brewer, M.L., van Kessel, G., Sanderson, B., Naumann, F., Lane, M., Reubenson, A., & Carter, A. (2019). Resilience in higher education students: A scoping review. *Higher Education Research and Development*, 38(6), 1105-1120. <https://doi.org/10.1080/07294360.2019.1626810>
- Chua, J.H., Cheng, C.K.T., Cheng, L.J., Ang, W.H.D., & Lau, Y. (2023). Global prevalence of resilience in higher education students: A systematic review, meta-analysis and meta-regression. *Current Psychology*, 42, 1-19. <https://doi.org/10.1007/s12144-022-03366-7>
- Cook, T., Noone, S., & Thomson, M. (2019). Mindfulness-based practices with family carers of adults with learning disability and behaviour that challenges in the UK: Participatory health research. *Health expectations*, 22(4), 802-812. <https://doi.org/10.1111/hex.12914>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage. <https://doi.org/10.1177/1094428108324688>

- Daly, L.M. (2020). Resilience: An Integrated Review. *Nursing science quarterly*, 33(4), 330-338. <https://doi.org/10.1177/0894318420943141>
- Dinse, L. (2024). The Spaces in Between: Creating Community Resilience Through Small Changes. *Adult Learning*, 35(1), 12-19. <https://doi.org/10.1177/10864822231223447>
- Ewert, C., Vater, A., & Schröder-Abé, M. (2021). Self-Compassion and Coping: a Meta-Analysis. *Mindfulness*, 12, 1063-1077. <https://doi.org/10.1007/s12671-020-01563-8>
- Feraco, T., Casali, N., & Meneghetti, C. (2022). Adaptability favors positive academic responses and posttraumatic growth under COVID-19: a longitudinal study with adolescents. *European journal of psychology of education*, 1-19. Advance online publication. <https://doi.org/10.1007/s10212-022-00667-0>
- Gross, J.J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1-26. <https://doi.org/10.1080/1047840X.2014.940781>
- Hartson, K.R., Hall, L.A., & Choate, S.A. (2021). Stressors and resilience are associated with well-being in young adult college students. *Journal of American College Health*, 71(3), 821-9. <https://doi.org/10.1080/07448481.2021.1908309>
- Holdsworth, S., Turner, M., & Scott-Young, C. M. (2017). ... Not drowning, waving. Resilience and university: a student perspective. *Studies in Higher Education*, 43(11), 1837-1853. <https://doi.org/10.1080/03075079.2017.1284193>
- Kalisch, R., Müller, M. B., & Tüscher, O. (2015). A conceptual framework for the neurobiological study of resilience. *The Behavioral and brain sciences*, 38, e92. <https://doi.org/10.1017/S0140525X1400082X>
- Li, X., Malli, M. A., Cosco, T. D., & Zhou, G. (2024). The Relationship Between Self-Compassion and Resilience in the General Population: Protocol for a Systematic Review and Meta-Analysis. *JMIR research protocols*, 13, e60154. <https://doi.org/10.2196/60154>
- Mcdermott, R. C., Fruh, S. M., Williams, S., Hauff, C., Graves, R. J., Melnyk, B. M., & Hall, H. R. (2020). Nursing students' resilience, depression, well-being, and academic distress: Testing a moderated mediation model. *Journal of advanced nursing*, 76(12), 3385-3397. <https://doi.org/10.1111/jan.14531>
- Mitchell, A.E.P. (2021). Resilience and mindfulness in nurse training on an undergraduate curriculum. *Perspectives in psychiatric care*, 57(3), 1474-1481. <https://doi.org/10.1111/ppc.12714>
- Nakhostin-Khayyat, M., Borjali, M., Zeinali, M., Fardi, D., & Montazeri, A. (2024). The relationship between self-regulation, cognitive flexibility, and resilience among students: a structural equation modeling. *BMC Psychology*, 12, 337. <https://doi.org/10.1186/s40359-024-01843-1>
- Nowell, L.S., Norris, J.M., & Moules, N. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1-13. <https://doi.org/10.1177/1609406917733847>
- Oh, V.K.S., Sarwar, A., & Pervez, N. (2022). The study of mindfulness as an intervening factor for enhanced psychological well-being in building the level of resilience. *Frontiers in psychology*, 13, 1056834. <https://doi.org/10.3389/fpsyg.2022.1056834>
- Ozbay, F., Johnson, D. C., Dimoulas, E., Morgan, C. A., Charney, D., & Southwick, S. (2007). Social support and resilience to stress: from neurobiology to clinical practice. *Psychiatry*, 4(5), 35-40. PMID: 20806028 <https://pmc.ncbi.nlm.nih.gov/articles/PMC2921311/>
- San Román-Mata, S., Puertas-Molero, P., Ubago-Jiménez, J. L., & González-Valero, G. (2020). Benefits of Physical Activity and Its Associations with Resilience, Emotional Intelligence, and Psychological Distress in University Students from Southern Spain. *International journal of environmental research and public health*, 17(12), 4474. <https://doi.org/10.3390/ijerph17124474>
- Secer, E., & Yildizhan, Y.C. (2020). The Relationship between Physical Activity Levels and Psychological Resilience of University Students. *Propósitos y Representaciones*, 8, e598. <https://doi.org/10.20511/pyr2020.v8nSPE2.598>
- Sha, S., Heller, K., Hartson, K.R., & Hall, L. (2024). College students' resilience-promoting behaviors and psychological well-being: A latent class analysis. *Open Health*, 5(1), 20230041. <https://doi.org/10.1515/ohe-2023-0041>

- Southwick, S.M., Sippel, L., Krystal, J., Charney, D., Mayes, L., & Pietrzak, R. (2016). Why are some individuals more resilient than others: the role of social support. *World psychiatry*, 15(1), 77-79. <https://doi.org/10.1002/wps.20282>
- World Health Organization. Mental health. (2022). Available on the world wide web at <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>. Accessed 11 March 2025.
- Xia, B., Ma, Z.C., & Hu, Y.Y. (2020). Research on the Relationship between Physical Exercise, Psychological Flexibility and Positive Emotion of College Students Based on Computer Mathematical Model. *Journal of Physics: Conference Series*, 1578, 012009. <https://doi.org/10.1088/1742-6596/1578/1/012009>
- Xu, S., Liu, Z., Tian, S., Ma, Z., Jia, C., & Sun, G. (2021). Physical Activity and Resilience among College Students: The Mediating Effects of Basic Psychological Needs. *International journal of environmental research and public health*, 18(7), 3722. <https://doi.org/10.3390/ijerph18073722>
- Yasmeen, K., Imran, H., & Zaidi, S.M.I.H. (2024). Transforming Your Life through Mindfulness: Practices, Resilience Building, and Goal-Setting. *Pakistan Social Sciences Review*, 8, 3. [https://doi.org/10.35484/pssr.2024\(8-III\)61](https://doi.org/10.35484/pssr.2024(8-III)61)
- Yavuz Sercekman, M. (2024). Exploring the sustained impact of the Mindfulness-Based Stress Reduction program: a thematic analysis. *Frontiers in psychology*, 15, 1347336. <https://doi.org/10.3389/fpsyg.2024.1347336>
- Yousefi Afrashteh, M., & Hasani, F. (2022). Mindfulness and psychological well-being in adolescents: the mediating role of self-compassion, emotional dysregulation and cognitive flexibility. *Borderline personality disorder and emotion dysregulation*, 9(1), 22. <https://doi.org/10.1186/s40479-022-00192-y>
- Zhang, Y., Luo, X., Che, X., & Duan, W. (2016). Protective Effect of Self-Compassion to Emotional Response among Students with Chronic Academic Stress. *Frontiers in psychology*, 7, 1802. <https://doi.org/10.3389/fpsyg.2016.01802>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).