

## Peer Reviewed Article

# EXPERIENCES OF FIRST-YEAR RADIOGRAPHY STUDENTS TRANSITIONING FROM HIGH SCHOOL TO UNIVERSITY: A QUALITATIVE EXPLORATORY STUDY

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### Abstract

**Introduction:** Successful transition to higher education is essential for undergraduate students to achieve academic success. This study aimed to use a tertiary institution in Zimbabwe as a case study to explore the experiences of first-year radiography students transitioning from high school to higher education.

**Methods:** The study employed a qualitative exploratory design to investigate the experiences of first-year radiography students selected through purposive sampling. Data were gathered through 12 semi-structured interviews, which were then transcribed and analysed following the principles outlined by Braun and Clarke. The data were managed using Nvivo 13 software.

**Results:** Three major themes were created that explained the transition of first-year radiography students, including: the struggles of university life, consequences of university challenges, and strategies for academic and personal success.

**Conclusions:** The study highlights the challenges first-year radiography students face during their transition from high school to university, including academic demands, financial difficulties, and social isolation. It emphasises the importance of support systems, coping mechanisms, and resilience for academic success and well-being.

**Keywords:** First-year, radiography, transition, coping, challenges, success

### INTRODUCTION

The first year of university signifies the onset of emerging adulthood, a vital phase for self-development, lifestyle choices, and identity formation.<sup>[1]</sup> Emerging adulthood, characterised by exploration and self-discovery, significantly influences students' academic performance and social integration as they navigate this new stage.<sup>[2]</sup> Previous research has identified several challenges students encounter during this transition, including academic pressures, social integration, and emotional stress.<sup>[3]</sup> Although various models have been proposed to explain this transition,<sup>[4-9]</sup> it is crucial to recognise that student radiographers experience distinct challenges that require tailored approaches. With the growing demand for radiographers, understanding the challenges faced by radiography students is essential for developing effective educational frameworks.<sup>[10]</sup>

Numerous studies have documented the distinct challenges faced by radiography students.<sup>[11-13]</sup> These challenges include balancing rigorous academic coursework with demanding clinical placements, all while managing the high-stakes responsibilities inherent in medical imaging. Errors

in radiographic practice can directly affect patient radiation protection and the quality of care, which adds to the pressure and can lead to increased feelings of anxiety and being overwhelmed.<sup>[13,14]</sup> The field of radiography requires not only high technical proficiency but also emotional resilience, making the transition into this profession particularly critical for students.<sup>[14]</sup> Despite these significant challenges, there remains a notable gap in research specifically addressing the unique experiences of Zimbabwean radiography students. Therefore, this study aimed to use a tertiary institution in Zimbabwe as a case study to explore the experiences of first-year radiography students transitioning from high school to higher education. The study had two primary objectives.

1. To identify the specific challenges first-year radiography students face during their transition from high school to higher education.
2. To explore the coping strategies employed by these students to navigate their new academic and clinical environments.

By identifying these challenges and effective coping mechanisms, the aim of the study was to inform educators and policymakers regarding effective interventions that can facilitate a smoother transition for radiography students. Ultimately, the goal is to develop supportive measures that enhance this transition process.

## METHODS

### • Study design

This study employed a qualitative exploratory design. A qualitative exploratory design was an appropriate choice for this study as it allowed for a rich, detailed understanding of the transition experiences of first-year radiography students. This approach not only addresses the existing research gap but also contributes valuable knowledge that can enhance educational practices and support systems in the field of radiography.<sup>[15]</sup>

### • Research setting and participants

Participants for this study were recruited from the first-year cohort of radiography students at a one tertiary institution in Zimbabwe. This institution is one of only three in the country that offers a four-year Bachelor of Science Honours degree in both diagnostic and therapeutic radiography. Each year, approximately 25 students enroll, with 15 studying diagnostic radiography and 10 in therapeutic radiography. The total population at the time of the study was 103 students. To facilitate their transition, first-year students participate in an orientation programme one week before the academic year begins.

Participants were selected using purposive sampling, with clear inclusion and exclusion criteria to ensure the study focused on students with comparable backgrounds. Inclusion criteria: first-year radiography students in their first semester of study, direct entrants from high school (i.e., no prior university experience), to minimise recall bias and capture the unique transition from secondary to tertiary education, and possessing a minimum threshold of A-level points (or equivalent) to ensure academic preparedness. Exclusion criteria: previous enrollment in higher education, as their experiences could differ significantly from those of direct high school entrants, and incomplete first-semester records, to maintain consistency in assessing early adaptation.

This approach ensured a homogeneous cohort while allowing for diversity in pre-university backgrounds (e.g., rural vs. urban schooling), as referenced in prior studies on educational transitions.<sup>[15,16]</sup> By focusing on students early in their programme, the study captured immediate and reflective experiences of their transformation into radiography undergraduates. The sample size (n=12) was determined by data saturation, which was reached when additional interviews no longer provided new insights into first-year students' transition experiences.<sup>[15]</sup>

### • Data collection instrument

Data were collected using a self-developed semi structured interview guide using questions based on a review of existing literature.<sup>[1,3,7,11,13]</sup> A pilot-test was conducted and included four students. The pilot study was used to improve clarity and relevance before the main data collection. The students who participated in the pilot study were excluded from the main study. Feedback from the pilot participants led to refinements in the language and wording of the questions. Some of the final questions are listed below.

1. What specific challenges have you encountered during your transition from high school to your first year in the radiography programme?
2. Can you share an experience where you felt overwhelmed or stressed by the demands of your radiography studies or clinical placements?
3. What coping strategies have you found most effective in addressing the challenges you face as a first-year radiography student?
4. Looking back at your transition process, what support systems or resources have been beneficial in helping you navigate this journey?

### • Data collection and analysis

Data were collected through semi-structured face-to-face interviews, an approach chosen for its flexibility.<sup>[17]</sup> After receiving informed consent, participants were allowed to share their experiences freely while guiding them toward important areas of the discussion.<sup>[17]</sup> Each interview lasted approximately 28-45 minutes and was audio-recorded and transcribed using Otter.ai,<sup>[18]</sup> an Android interview recording application. The data were managed in Nvivo 13, a qualitative data management software,<sup>[19]</sup> to allow structured analysis. "In Nvivo 13, codes were organised hierarchically to facilitate thematic analysis, allowing for clear visualisation of relationships between concepts. Data analysis adhered to thematic analysis principles as suggested by Braun and Clarke.<sup>[20]</sup> This process involved six stages.

1. Familiarisation with the data. Researchers reviewed the interview transcripts multiple times to immerse themselves in the data. This process involved reading through the transcripts while taking notes on initial impressions and notable quotes.
2. Generating initial codes. Researchers identified meaningful segments of data related to the challenges and coping strategies mentioned by participants. Each transcript was systematically analysed to generate initial codes, focusing on specific concepts that emerged from the students' responses.
3. Searching for themes. After generating initial codes, researchers grouped related codes to identify broader themes that encapsulated multiple aspects of the data.
4. Reviewing themes. Once potential themes were identified, researchers revisited the datasets to evaluate whether these themes accurately reflected the data.

5. Defining and naming themes. Each theme was further defined and named in a way that encapsulated the essence of the data it represented.
6. Producing the report. The final report integrated the identified themes into a comprehensive narrative that detailed the experiences of first-year radiography students. Quotations from participants were included to substantiate each theme and provide a rich, qualitative account of their transition experiences.

### Trustworthiness of the study

To ensure the trustworthiness of the study, Lincoln and Guba's framework was applied, encompassing credibility, dependability, conformability, and transferability.<sup>[21]</sup> Credibility was strengthened through member checks, where radiography students reviewed their interview transcripts to verify accuracy and confirm interpretations.<sup>[22]</sup> Dependability was established by maintaining a detailed audit trail, which included raw data, methodological decisions, and analytical processes, allowing for transparency and reproducibility.<sup>[23]</sup> To enhance transferability, thick descriptions of the participants, their backgrounds, and the institutional context were provided, enabling readers to evaluate the applicability of findings to similar settings.<sup>[24]</sup> Additionally, an independent lecturer assessed the coding process to further reinforce rigor and dependability.<sup>[25]</sup> Together, these strategies ensured that the study's results were credible, confirmable, transferable, and dependable, thereby upholding its overall trustworthiness.

### Ethical considerations

The study was carried out according to the Declaration of Helsinki.<sup>[26]</sup> Ethical approval for this study was obtained from the HIT School of Allied Health Sciences Ethics Committee (Ref: AH-SEC/03/2024). Informed consent was sought from all participants before data collection, ensuring they were fully aware of the study's purpose and their rights. To protect participant confidentiality, all identifying information was removed from transcripts, and pseudonyms were assigned to each participant in the final report.

## RESULTS

### Demographics

A total of 12 radiography students participated in the study: females (7) and males (5). The ages ranged from 18 to 26 years. Table 1 provides a summary of their demographic characteristics.

### Transition from high school to higher education among first-year radiography students

This section outlines the themes and sub-themes derived from the qualitative interviews conducted with radiography students regarding their experiences as they transitioned from high school to university. Three were created to explain these experiences as shown in Table 2.

**Table 1.** Demographic characteristics of the participants

Students Number	Gender	Age
S1.	M	19
S2.	F	19
S3.	F	20
S4.	M	26
S5.	F	21
S6.	F	19
S7.	M	19
S8.	F	18
S9.	M	20
S10.	M	22
S11.	F	19
S12.	F	20

### » Theme 1: struggles of university life

This theme depicted the challenges radiography students face as they bridged the gap between their expectations and the realities of academic and social life at university. Two subthemes were developed: discrepancy between aspirations and outcomes, and external pressures and challenges. Participants shared a wide range of feelings and thoughts about their experiences, demonstrating the varied nature of the university experience. The verbatim comments of the participants are in italics.

#### i. Discrepancy between aspirations and outcomes

The student participants expressed a discrepancy between their expectations for university life and the reality they encountered. Many expressed shock and disillusionment, with several admitting that their initial expectations were overly optimistic.

*Honestly, it is not what I expected. I expected it to be fun... (S10).*

This demonstrates how preconceived beliefs conflicted with actual experiences. Another participant expressed a similar sentiment.

*No, it's not what I anticipated. Both academically and socially, it's not what I expected (S11).*

The challenges with academic integrity were obvious; many described the transition from high school to university as a jarring change. The student participants lamented the heavy academic workload.

*The academic workload has definitely been a challenge (S2).*

*In high school, you could rely on natural intelligence to pass, but here, the pressure is different (S4)*

#### ii. External pressures and challenges

Besides academic challenges, external pressures also exacerbated feelings of struggle among students. Financial challenges emerged as a widespread concern.

**Table 2.** Summary of themes, sub-themes, and exemplary quotes

Themes	Sub-Theme	Exemplary Quotes
1. Struggles of University Life	i. Discrepancy Between Aspirations and Outcomes ii. External Pressures and Challenge	"Honestly, it is not what I expected. I expected it to be fun..." (S10) "it stressed me out because I consider myself intelligent, so it was shocking to struggle in my first month at university" S10
2. Consequences of University Challenges	i. Social Isolation and wellbeing ii. Mental Health and Well-being iii. Poor academic performance	"So far, my social life is limited due to the workload and being busy with studies." S2 "I believe it can impact my well-being. I think mental health is crucial, and it goes hand-in-hand with social life. If I keep everything bottled up, especially the stress from assignments and research, I might end up giving up on radiography, thinking it's too hard." "feel stressed at times, and it affects my academic performance since there's just too much to handle." S3
3. Strategies for Academic and Personal Success	i. Support Systems ii. Collaboration iii. Positive mindset iv. Time management v. Active Learning Approaches vi. Peer Support and Mentorship vii. Open communication	"Right now, I'm relying on what the lecturers tell us because I'm still struggling to cope personally. I'm passing due to the lecturers' guidance and support from my colleagues. I try to implement their suggestions and adapt if something isn't working." S1 "I try to organize my time better and break tasks into smaller sections to manage the workload, although it's similar to what I did in high school." S2 "The seniors have a great vibe and help us feel welcomed and supported." S1 "I think we could improve the length of lectures. Right now, they are two hours each, which is quite long compared to the 35-minute classes in high school. Shorter lectures could help" S2 "In terms of mentorship, I feel it should be more tailored – one-on-one. It should be personalized." S4

*The main challenge has been managing my finances. The university has taught me to budget my money (S6).*

This financial strain often intersected with academic commitments, leading some students to be forced to prioritise income over their education.

*Sometimes, I may have to miss lectures to find ways to earn money through part-time jobs (S8).*

This illustrates the complexities of balancing work and academic responsibilities.

Furthermore, the issue of academic integrity added a layer of stress.

*We had to redo our assignments multiple times due to plagiarism issues (S6).*

This highlights the challenges participants have in adhering to institutional standards about academic integrity. This condition contributed to an overall sense of anxiety, as the fear of failing exacerbated the pressures already present in the academic and financial areas.

### » Theme 2: consequences of university challenges

Student narratives about the obstacles of university life re-

vealed substantial consequences, which are arranged into three sub-themes: social isolation and well-being, mental health and well-being, and poor academic performance. These intertwined challenges revealed how the participants' experiences influenced their social lives, mental health, and academic performance.

#### *i. Social isolation and well-being*

Many participants reported feeling socially isolated as a direct result of their academic pressure. Several stated that their hectic schedules hampered their social interactions.

*My social life seems limited, mostly because the workload keeps me busy (S3).*

Such limited social interactions not only reduced prospects for friendship and support but also influenced general well-being, as several participants emphasised the close link between mental health and social life.

*I think mental health is crucial, and it goes hand-in-hand with social life (S12).*

This revealed how the stress from academic demands could lead to feelings of isolation and concern about future academic endeavours.

### ii. Mental health and well-being

The overwhelming nature of university life has a huge impact on students' mental health. Participants regularly mentioned emotions of anxiety and stress, which were generally related to their academic struggles.

*It's overwhelming, and I'm trying to find a balance (S3).*

This highlights the pressure to manage both academic responsibilities and personal well-being. Concerns about their academic future fuelled anxiety.

*I was genuinely worried that I wouldn't make it through the program. The pressure was overwhelming (S9).*

The feelings of despair were evident, highlighting the struggle to maintain motivation amidst overwhelming stress.

*In the beginning, I would wake up and think, 'I don't want to go to school,' but I had to push myself (S7).*

### iii. Poor academic performance

A noticeable link emerged between mental health and academic performance, with many participants reporting that stress and anxiety had a direct impact on their academic outcomes.

*I feel stressed at times, and it impacts my academic performance since there's just too much to handle (S3).*

The participants expressed frustration when faced with academic obstacles, particularly when their struggles were unanticipated.

*It stressed me out because I consider myself intelligent, so it was shocking to struggle in my first month at university (S10).*

## » Theme 3: strategies for academic and personal success

The thematic analysis of the student participants' experiences regarding successful strategies in university life yielded key insights organised into 7 distinct subthemes.

### i. Support systems

### ii. Collaboration

### iii. Positive mindset

### iv. Time management

### v. Active learning approaches

### vi. Peer support and mentorship

### vii. Open communication

These results demonstrate the diverse strategies the participants employed to navigate the challenges of transitioning from high school to university while striving for personal success.

### i. Support systems

The participants stressed the value of strong support systems, stating that instruction from lecturers, peer

encouragements and family greatly improved their academic journeys.

*Right now, I'm relying on what the lecturers tell us because I'm still struggling to cope personally (S1).*

*Having friends to talk to really helps (S1).*

### ii. Collaboration

The study highlighted the importance of collaboration and open communication among peers. Many participants stated that these activities improved their comprehension of course materials.

*I engage in group studies with my classmates... Group discussions can really help me understand the material better (S6).*

Furthermore, making an effort to engage with peers was described as essential to personal development.

*I just try to talk to everyone... I'm just making an effort to engage with everyone (S5).*

### iii. Positive mindset

Participants reported the importance of cultivating a positive mindset for personal success, highlighting the significance of self-reflection and adapting to new environments.

*I'm just focusing on living in the moment and appreciating where I am right now. I told myself, Why not just live in the moment? (S4).*

### iv. Time management

Participants emphasised the importance of effective time management strategies to balance academic workloads with personal responsibilities, including breaking assignments into smaller segments.

*I try to organize my time better and break tasks into smaller sections (S3).*

Others discussed having to budget their finances to reduce external pressures.

*I write down my budget so that I can plan for the semester without stressing my parents (S6).*

### v. Active learning approaches

Active learning techniques were emphasised, with participants engaging with peers and course materials, deepening understanding and enhancing academic skills through attentive participation in lectures and collaborative studying.

*I've made friends and participating in class presentations helps me improve my communication skills (S7).*

### vi. Peer support and mentorship

The study highlighted the importance of peer support and mentorship in the participants' experiences; many appreciated the guidance provided by senior students.

*The seniors have a great vibe and help us feel welcomed and supported (S1).*

Participants suggested that connecting first-year students with upperclassmen could improve their adjustment to university life, highlighting the need for tailored mentorship programs.

#### **vii. Open communication**

Open communication is crucial for success in counselling and academic skills development. Participants expressed a desire for improved support services.

*I think counselling would help. The change from high school to university is significant (S4).*

## **DISCUSSION**

The successful transition to higher education is essential for undergraduate students to achieve academic success.<sup>[27]</sup> A tertiary institution in Zimbabwe was used as a case study to explore the experiences of first-year radiography students transitioning from high school to higher education. The insights gathered from the thematic analysis revealed the complex and multifaceted nature of university life. Understanding the transition from high school to university informs and provides insights into radiography student experiences, expectations, and outcomes, ultimately enhancing their success in this field.

The struggles of university life revealed a conflict between participants' aspirations and the realities of university life. The findings of the current study show that radiography students enter higher education full of optimism, often oversimplifying the rigours and demands that lie ahead. These findings are consistent with numerous studies examining a diverse population of first-year university students.<sup>[28-32]</sup> A study by Smith and Wertlieb,<sup>[28]</sup> found that this mismatch between student expectations and reality negatively affected academic performance. Specifically, the research showed that students with excessively high social or academic expectations had lower first-year grade point averages than those with average or below-average expectations. This emphasises the need to effectively manage radiography students' expectations, particularly during orientation week, to prevent potential negative impacts on their academic performance and mental health. This could be achieved by pairing students with academic advisors during orientation for individual sessions that help clarify academic goals, resources, and realistic planning.<sup>[33]</sup>

Financial burdens compound the stress of academic expectations. Studies indicate that conflicting time constraints on work and school increase the stress levels of students, especially during examination times.<sup>[34,35]</sup> The student participants in the current study reported balancing part-time employment with their academic responsibilities, which detracts from their educational engagement and contributes to feelings of inadequacy. Numerous studies have identified financial challenges as a significant stressor for students,

particularly in low-resource settings,<sup>[11-13,36]</sup> highlighting the need for students to achieve financial independence. According to Borjas et al,<sup>[37]</sup> financial independence is important for university students; it not only alleviates stress but also supports academic engagement, enhances motivation, and enables access to essential resources.

The second theme revealed the impact of university struggles on the participants' overall well-being, by focusing specifically on experiences of social isolation and mental health challenges. The demanding academic workload characterised by high volumes of assignments, complex subject matter, and pressure to maintain competitive grades often leaves students feeling emotionally isolated. This isolation hinders their ability to forge supportive relationships, ultimately affecting their academic success. Prevalent mental health concerns, such as anxiety and stress, further exacerbate these struggles, leading to a detrimental cycle where poor mental health contributes to decreased academic performance.<sup>[38]</sup> Literature supports this notion, indicating that the stress of academic pressures can significantly impact mental health, creating a bidirectional relationship that complicates students' experiences.<sup>[39-41]</sup> Addressing these interconnected challenges is crucial; universities may need to implement supportive programs and resources that manage academic demands as well as foster a more inclusive and supportive environment for students.<sup>[13]</sup>

The findings reveal that the student participants in this study exhibited remarkable resilience by employing a range of coping strategies. Radiography students show resilience through coping strategies, including peer support, active engagement with peers, a positive mindset, and effective time management. These strategies enhance understanding of course material, reduce feelings of isolation, and foster adaptability. Active learning approaches enhance social connectivity and emotional engagement.<sup>[42]</sup> While the latter coping strategies have a student as the protagonist, institutions also have a role to play, as also reported by the students in this work. Institutions must implement responses that support mental health initiatives.<sup>[43]</sup> A study by Chinene,<sup>[13]</sup> proposes a "cascade model" for mental health support among radiography students, placing educators at the centre of this framework. According to this model, educators have a crucial role in fostering supportive environments and providing comprehensive assistance, which can enhance student resilience and improve academic success.

## **LIMITATIONS**

As the study was conducted at a single institution, the findings may not fully reflect the experiences of students in different educational contexts. To enhance the applicability of the results, future research should include a larger and more diverse sample across multiple institutions. Additionally, longitudinal studies that follow students throughout their academic journeys would be valuable, as they could combine qualitative and quantitative approaches to assess the long-term impacts of support systems on aca-

demographic success. It is also important to note that the use of semi-structured interviews may introduce bias, as participants' self-reports and interviewer influence can affect the data collected.

## CONCLUSIONS

This study highlights the complexities that first-year radiography students confront when they transition from high school to higher education. The findings reveal that misunderstandings about university life cause students to struggle with academic demands, financial difficulties, and social isolation, all of which harm their well-being and academic achievement. The study underscores the relevance of support systems and good coping mechanisms, highlighting the necessity for institutions to adopt tailored support strategies. Finally, increasing students' resilience and controlling their expectations can improve academic success and well-being, paving the way for a smoother transition into the radiography profession. Future research should continue to explore these dynamics for a more nuanced understanding.

## DECLARATION

ChatGP was used to only improve the readability of some sections of this manuscript.

## CONFLICT OF INTEREST

None to declare.

## DISCLAIMER

*The views and opinions expressed in this article are those of the author and do not necessarily reflect the views of the publisher and editorial board.*

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