# Proposal

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Chapter One

## 1.1 Introduction and Background

### 1.1.1 Introduction

The COVID-19 pandemic has brought unprecedented challenges to global education systems, disrupting traditional modes of teaching and learning across all levels of education (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020). In response to the outbreak, educational institutions worldwide were compelled to adapt swiftly, transitioning from conventional classroom-based instruction to remote and online learning platforms (Hodges et al., 2020). While these measures were necessary for the safety of students, faculty, and staff, the abrupt shift has raised concerns about their impact on academic performance, particularly among disciplines that require hands-on training and practical experience, such as medical education.

### 1.1.2 Background

The University of Zambia, Ridgeway Campus, has not been immune to the far-reaching effects of the COVID-19 pandemic. Medical education, in particular, presents unique challenges during a public health crisis. Medical students traditionally engage in rigorous, hands-on clinical training, necessitating close interaction with patients, clinical faculty, and healthcare facilities. The pandemic, with its social distancing measures and health risks, has led to significant disruptions in delivering medical education.

The University of Zambia swiftly mitigated these disruptions by implementing various measures, including online lectures and telemedicine for clinical education. However, the extent to which these measures have impacted the academic performance of medical students remains largely unexplored. This proposal seeks to address this gap in knowledge by conducting a comprehensive

assessment of the impact of COVID-19 on the academic performance of medical students at the University of Zambia, Ridgeway Campus.

The outcomes of this study will not only inform the university's response to future public health crises and contribute to the broader understanding of how medical education can adapt to unforeseen challenges without compromising the quality of training. By conducting a thorough investigation, we aim to provide evidence-based recommendations to support the ongoing efforts to enhance medical education in the face of unpredictable global health crises.

In this proposal, we outline our research objectives, methods, anticipated contributions, and a tentative timeline for the study. Additionally, we address ethical considerations and potential limitations, ensuring the rigor and validity of our findings.

## 1.2 Problem Statement

The COVID-19 pandemic has disrupted educational systems globally, challenging the conventional delivery of instruction and raising concerns about its impact on student s academic performance in various disciplines. Medical education, characterized by its hands-on clinical training and practical components, faces unique challenges adapting to the restrictions and safety measures imposed in response to the pandemic. The University of Zambia, Ridgeway Campus, has not been immune to these challenges, necessitating a thorough investigation into the specific impact of COVID-19 on the academic performance of medical students.

The sudden transition from in-person to remote and online learning, the limitations on clinical exposure, and the strain on healthcare resources have all contributed to an environment of uncertainty for medical students. As they prepare to become the next generation of healthcare professionals, their ability to acquire the necessary knowledge and skills is paramount, making assessing the repercussions of these disruptions on their academic journey imperative.

Furthermore, there is a notable lack of empirical research and comprehensive data regarding the extent of these disruptions and their consequences. While anecdotal evidence suggests that medical students have faced numerous challenges, such as reduced access to clinical settings and increased mental health stressors, a systematic analysis is required to understand the full scope of the issue. Therefore, this study aims to investigate and document the impact of the COVID-19 pandemic on the academic performance of medical students at the University of Zambia, Ridgeway Campus. By identifying specific challenges, evaluating the effectiveness of remote learning strategies, and assessing the overall academic outcomes during this period, this research seeks to provide evidence-based insights for educators, policymakers, and healthcare institutions to better prepare for and respond to future disruptions in medical education.

In addressing this problem, we will explore the experiences and perspectives of medical students, faculty, and administrators, drawing on quantitative and qualitative data sources. Our findings will contribute to a deeper understanding of the challenges faced by medical students during the pandemic and inform strategies to ensure the continuity and quality of medical education in similar crises.

## 1.3 Rationale of Study

The COVID-19 pandemic has emerged as an unprecedented global crisis, profoundly affecting various aspects of society, including education. Medical education, characterized by its rigorous curriculum and emphasis on practical training, faces unique challenges due to the pandemic. With healthcare institutions stretched to their limits, medical students have been compelled to adapt to a new learning environment characterized by online instruction, reduced clinical exposure, and significant disruptions to their academic routines (Olum et al., 2020). Given the critical role of medical professionals in public health emergencies, it is imperative to assess how the pandemic

has impacted the academic performance of medical students at the University of Zambia, Ridgeway Campus.

The disruption in medical education caused by COVID-19 is not limited to Zambia but is a global concern (Rose, 2020). Medical students worldwide have grappled with uncertainties regarding their academic progression, practical skills acquisition, and overall preparedness for their future roles as healthcare providers (Frenk et al., 2022). The experiences and outcomes of medical students during this crisis can serve as valuable lessons for adapting medical education to unforeseen challenges in the future.

Moreover, existing literature highlights the potential adverse effects of the pandemic on the mental health and well-being of medical students (Su et al., 2021). The rapid transition to remote learning, increased academic pressures, and the fear of contracting the virus while on clinical rotations have contributed to heightened stress levels among these students. Understanding the intersection between academic performance and mental health is crucial for designing effective support systems and interventions to ensure the holistic well-being of medical students during and beyond the pandemic.

The University of Zambia, Ridgeway Campus, has implemented various strategies to address these challenges, such as virtual clinical experiences and telemedicine (Omer et al., 2021). However, these measures' efficacy and impact on academic performance remain underexplored within the local context. By conducting this study, we aim to provide the university with actionable insights into the effectiveness of these adaptations and potential areas for improvement.

In addition, this research is aligned with the broader goals of enhancing medical education and healthcare preparedness in Zambia. As a country with a significant burden of healthcare challenges, including infectious diseases like HIV/AIDS and malaria, it is vital to ensure a robust

pipeline of well-trained medical professionals (Chanda-Kapata et al., 2019). Understanding the effects of the pandemic on medical education can inform future strategies for medical schools and government agencies in Zambia to strengthen the resilience of their healthcare workforce in the face of health crises.

In summary, this study is not only timely but also essential in shedding light on the multifaceted impact of COVID-19 on medical education and the academic performance of medical students. It offers valuable insights that can inform local and global efforts to enhance medical education resilience and support the well-being of future healthcare providers.

## 1.4 Significance of Study

The proposed research holds significant importance for multiple stakeholders, encompassing the university administration, faculty, medical students, and the broader healthcare system in Zambia. The following paragraphs outline the key areas where the study's findings will have a substantial impact:

1. **Informed Decision-Making for University and Faculty**: The University of Zambia, Ridgeway Campus, and its medical faculty will benefit directly from this study by understanding medical students' challenges during the COVID-19 pandemic. The findings will enable university administrators and faculty to make informed decisions about curriculum adaptation, integrating technology in medical education, and providing academic support. These insights ensure medical students receive the best possible education despite unforeseen disruptions.

2. **Enhanced Academic Support:** Medical students' academic performance is closely linked to their well-being and mental health. This study can inform the development of targeted academic and psychological support programs by uncovering the relationship between the pandemic's

disruptions, academic performance, and mental health. These programs can help mitigate stress and anxiety among medical students, ultimately contributing to their success and well-being.

3. **Global Insights into Medical Education Resilience:** The findings from this research will contribute to the global body of knowledge on medical education resilience during crises. Medical schools and institutions worldwide can learn from the experiences of the University of Zambia and the strategies employed to adapt to the pandemic. This knowledge exchange is critical for strengthening the preparedness of medical education systems against future public health emergencies.

4. **Policy and Healthcare Workforce Planning:** Policymakers in Zambia and other countries with similar healthcare challenges can use the study's findings to inform policy decisions related to medical education and healthcare workforce planning. Understanding the impact of COVID-19 on medical education can help shape policies that ensure an uninterrupted supply of well-trained healthcare professionals, which is crucial for addressing the country's healthcare needs.

5. **Contribution to Scientific Literature:** The research outcomes will add to the academic literature on the impact of COVID-19 on medical education and academic performance. As the first comprehensive study of its kind in Zambia, the findings will be valuable for future researchers and educators interested in exploring similar topics or building on this research to address emerging challenges in medical education.

6. **Preparedness for Future Crises:** The insights gained from this study will empower institutions and healthcare systems to develop more robust contingency plans for future crises. By understanding the strengths and weaknesses of the adaptations made during the pandemic, stakeholders can better prepare for and respond to similar challenges in the future, safeguarding the continuity of medical education.

**1.5 Main Aim of Study**

This research aims to comprehensively assess the impact of the COVID-19 pandemic on the academic performance of medical students at the University of Zambia, Ridgeway Campus. This study seeks to investigate the challenges faced by medical students during the pandemic, explore the effectiveness of educational adaptations implemented by the university, and understand the relationship between these challenges, academic performance, and the mental well-being of students. By achieving this aim, we intend to provide evidence-based insights to inform strategies for enhancing medical education resilience, academic support, and healthcare workforce preparedness during and beyond public health crises.

**1.6 Specific Objectives**

1. To assess the extent of disruption to the academic calendar for medical students at the University of Zambia, Ridgeway Campus, caused by the COVID-19 pandemic, including the duration and nature of interruptions.

2. To explore medical students' challenges in adapting to remote and online learning modalities, focusing on technological barriers, access to resources, and engagement with virtual instruction.

3. To investigate the effectiveness of the university's remote and online teaching methods, examining their impact on students' learning experiences, including the delivery of theoretical content and practical clinical training.

4. To examine the correlation between academic performance, as measured by course grades and examination results, and the challenges posed by the pandemic, specifically focusing on academic stress, mental health, and well-being of medical students.

5. To gain insights into the coping mechanisms medical students employ to navigate the academic challenges brought about by the pandemic, including utilizing support systems, self-directed learning strategies, and mental health resources.

6. To provide evidence-based recommendations to the University of Zambia, Ridgeway Campus, and relevant stakeholders for improving medical education resilience, academic support mechanisms, and healthcare workforce preparedness in future public health crises.

These specific objectives will guide the research process and ensure that the study addresses critical aspects related to the impact of COVID-19 on medical students' academic performance and well-being.

## 1.7 Hypotheis

This study is guided by the overarching hypothesis that the COVID-19 pandemic has substantially impacted the academic performance of medical students at the University of Zambia, Ridgeway Campus. Specifically, it is hypothesized that the disruptions caused by the pandemic, including the transition to remote and online learning, reduced clinical exposure, and heightened stress levels, have collectively influenced the academic outcomes of medical students.

Furthermore, it is hypothesized that the effectiveness of educational adaptations, such as virtual clinical experiences and telemedicine, varies in their ability to mitigate the negative effects of the pandemic on academic performance. It is anticipated that specific strategies may have been more successful in maintaining the continuity and quality of medical education. In contrast, others may have fallen short in replicating the hands-on clinical experience essential for medical training. Additionally, the study hypothesizes that there exists a correlation between academic performance and the mental health and well-being of medical students during the pandemic. It is posited that

increased academic stress and anxiety levels, stemming from uncertainties and changes in the learning environment, may have contributed to variations in academic outcomes among students.

Lastly, it is hypothesized that medical students have developed adaptive mechanisms to cope with the challenges posed by the pandemic. These coping mechanisms may encompass utilizing support networks, adopting self-directed learning strategies, and engaging with mental health resources. Understanding these coping mechanisms is critical in assessing the resilience and resourcefulness of medical students in the face of unprecedented disruptions to their education.

These hypotheses are the foundation for our research inquiries and will be rigorously tested through empirical data collection and analysis. The outcomes of this study will provide valuable insights into the multifaceted impact of COVID-19 on medical education and academic performance, ultimately contributing to evidence-based recommendations for enhancing the resilience of medical education systems in times of crisis.

## 1.8 Research Question

The following research questions have been formulated to guide this comprehensive study, aimed at understanding the intricate dynamics of how the COVID-19 pandemic has affected the academic performance of medical students at the University of Zambia, Ridgeway Campus. These questions are designed to address specific aspects of the impact, challenges, and adaptations experienced by medical students during this global health crisis.

1. To what extent has the academic calendar for medical students at the University of Zambia, Ridgeway Campus, been disrupted by the COVID-19 pandemic regarding the duration and nature of interruptions?

2. What challenges do medical students face in adapting to remote and online learning modalities during the pandemic, including technological barriers, access to resources, and engagement with virtual instruction?

3. How effective have the university's remote and online teaching methods been in meeting the learning needs of medical students, particularly concerning the delivery of theoretical content and practical clinical training?

4. Is there a statistically significant correlation between academic performance, as measured by course grades and examination results, and the challenges posed by the pandemic, including academic stress, mental health, and medical students?

5. What coping mechanisms have medical students employed to navigate the academic challenges brought about by the pandemic, and how have these mechanisms influenced their academic performance and well-being?

6. Based on the findings of this study, what evidence-based recommendations can be made to the University of Zambia, Ridgeway Campus, and relevant stakeholders for improving medical education resilience, academic support mechanisms, and healthcare workforce preparedness in anticipation of future public health crises?

These research questions will serve as the focal points for data collection, analysis, and interpretation, allowing for a comprehensive investigation into the multifaceted impact of COVID-19 on medical education and the academic performance of medical students.

**Chapter Two**

**2.0 Literature Review**

The COVID-19 pandemic has induced unprecedented disruptions in higher education globally, necessitating a reevaluation of the dynamics of academic performance and student well-being.

This literature review provides insights into key themes and findings from existing research on the impact of the pandemic on medical education and the academic performance of medical students. One prominent aspect of the pandemic's influence on medical education is the sudden shift to remote and online learning modalities. The transition to virtual instruction has been a global phenomenon (Olum et al., 2020), and the challenges encountered during this shift have been a recurring topic of investigation. Research indicates that medical students face obstacles related to technological disparities, limited access to reliable internet connectivity, and concerns regarding the effectiveness of online instruction (Rose, 2020; Frek et al., 2022). This shift has forced institutions to rethink pedagogical approaches, necessitating creative solutions to ensure the continuity of medical education.

Furthermore, the pandemic has disrupted the traditional clinical training experiences essential for medical students. Studies have highlighted a decrease in clinical rotations, which has resulted in a reduction in hands-on patient care experiences (Omer et al., 2021). Due to these disruptions, medical students have expressed concerns about their preparedness for future clinical practice, emphasizing the importance of practical training in medical education.

In addition to academic disruptions, medical students' mental health and well-being have come to the forefront of research inquiries. The pandemic has increased stress, anxiety, and burnout among medical students, who often experience high academic pressures (Frek et al., 2022; Olum et al., 2020). The implications of mental health challenges on academic performance and overall student well-being are of significant concern and have prompted the development of support systems within medical education institutions.

Despite these challenges, some research suggests that medical students have demonstrated resilience and adaptability during the pandemic. They have engaged in self-directed learning,

utilized online resources, and established peer support networks to mitigate the impact of disruptions (Su et al., 2021). These findings underscore the resourcefulness of medical students in navigating the changing landscape of medical education.

Moreover, studies examining the effectiveness of educational adaptations have reported mixed results. Virtual clinical experiences, telemedicine, and other innovations have been introduced to bridge the gap in practical training (Omer et al., 2021). While these adaptations have shown promise in certain contexts, questions remain about their long-term efficacy and how they can replicate the rich clinical experiences in traditional settings.

In conclusion, the literature reviewed here demonstrates that the COVID-19 pandemic has significantly impacted medical education and the academic performance of medical students. The transition to remote learning, clinical training disruptions, mental health challenges, and varying degrees of adaptability have all emerged as prominent themes. This study builds upon this existing literature by focusing on the specific context of the University of Zambia, Ridgeway Campus. It seeks to provide a comprehensive assessment of the impact and potential strategies for improving medical education resilience in the face of future crises.

Indeed, here is a description of each section of Chapter Three for your proposal:

**Chapter Three**

**3.0 Introduction to Methodology**

The methodology section serves as the blueprint for conducting the research, outlining the strategies, procedures, and tools that will be employed to address the research objectives. This chapter presents a comprehensive overview of the research methodology, detailing the study site, design, population, sample size, sampling method, inclusion and exclusion criteria, data collection tools, data analysis procedures, key variables, and ethical considerations that will guide our study.

### 3.1 Study Site

The study will be conducted at the University of Zambia, Ridgeway Campus, which serves as the primary site for medical education in Zambia. The Ridgeway Campus houses the medical school and provides a conducive environment for the research, as it represents the specific context in which medical students have been navigating the challenges posed by the COVID-19 pandemic.

### 3.2 Study Design

A mixed-methods research design will be employed to comprehensively explore the impact of COVID-19 on the academic performance of medical students. This design will encompass quantitative and qualitative data collection methods, allowing for a holistic understanding of the phenomenon. Quantitative research will involve surveying medical students, while qualitative data will be gathered through interviews and focus group discussions.

### 3.3 Study Population

The target population for this study consists of medical students currently enrolled at the University of Zambia, Ridgeway Campus. This population represents the group directly affected by the disruptions caused by the pandemic, making their experiences and perspectives essential to our research.

### 3.4 Sample Size

The sample size will be determined using a stratified random sampling technique, ensuring adequate representation of medical students across different academic years. The precise sample size will be calculated using statistical formulas to achieve a confidence level of 95% and a margin of error of 5% based on the estimated population size.

## 3.5 Sampling Method

Stratified random sampling will be employed to select participants from different academic years. This approach will ensure that the sample proportionally represents the entire population of medical students at the Ridgeway Campus.

## 3.6 Inclusion Criteria

Inclusion criteria will require participants to be enrolled as medical students at the University of Zambia, Ridgeway Campus, during the COVID-19 pandemic.

## 3.7 Exclusion Criteria

Participants who have taken a leave of absence, withdrawn from the program, or are not currently enrolled as medical students during the pandemic will be excluded from the study.

## 3.8 Data Collection Tools

Data will be collected using a structured questionnaire for the quantitative component and semi-structured interview guides for the qualitative component. These tools will be designed to capture relevant information regarding the impact of COVID-19 on academic performance, mental health, coping mechanisms, and the effectiveness of educational adaptations.

## 3.9 Data Analysis

Quantitative data will be analyzed using statistical software, while qualitative data will undergo thematic analysis. Combining these methods will allow for a comprehensive examination of the research questions.

## 3.10 Variables

The key variables include academic performance, mental health indicators, challenges faced during the pandemic, coping mechanisms, and the effectiveness of educational adaptations implemented by the university.

### 3.11 Ethical Considerations

Ethical considerations are paramount in this study. Ethical approval will be sought from the relevant university ethics committee, and informed consent will be obtained from all participants. Confidentiality and anonymity will be ensured, and participants can withdraw from the study at any time without consequences. Ethical guidelines set forth by the Declaration of Helsinki and other relevant ethical standards will be strictly followed throughout the research process.

This methodology chapter outlines the approach that will be taken to collect, analyze, and interpret data to address the research objectives comprehensively and ethically.

### Chapter Five

### 1. Grant Chart

In this section, you will find a detailed grant chart that outlines the allocation of financial resources for the research project. The graph will show how the project budget is distributed among various expenses, including personnel, equipment, data collection, analysis, and other relevant costs.

### 2. Budget

The budget appendix includes a comprehensive budget proposal specifying the research project's financial requirements. This section outlines anticipated expenditures and sources of funding. It covers all aspects of the budget, including personnel salaries, equipment and supplies, travel expenses, data analysis software, and any other costs associated with the research.

### 3. Questionnaire

The questionnaire included in this section is the data collection tool used in the study. It contains all the survey questions and response options to gather quantitative data from the study participants. The questionnaire is a critical component of the research methodology and is provided here for reference.

## 4. Consent Form

This section includes a copy of the informed consent form presented to and signed by research participants. The consent form outlines the study's purpose, participants' rights, confidentiality assurances, and their voluntary participation. It records participants' agreement to participate in the research and is essential for ethical considerations.

The appendices in this chapter provide supplementary information and materials essential for a comprehensive understanding of the research project and its execution. Researchers, reviewers, and other stakeholders can refer to these documents for a detailed overview of the research methodology, budget, data collection tools, and ethical considerations.
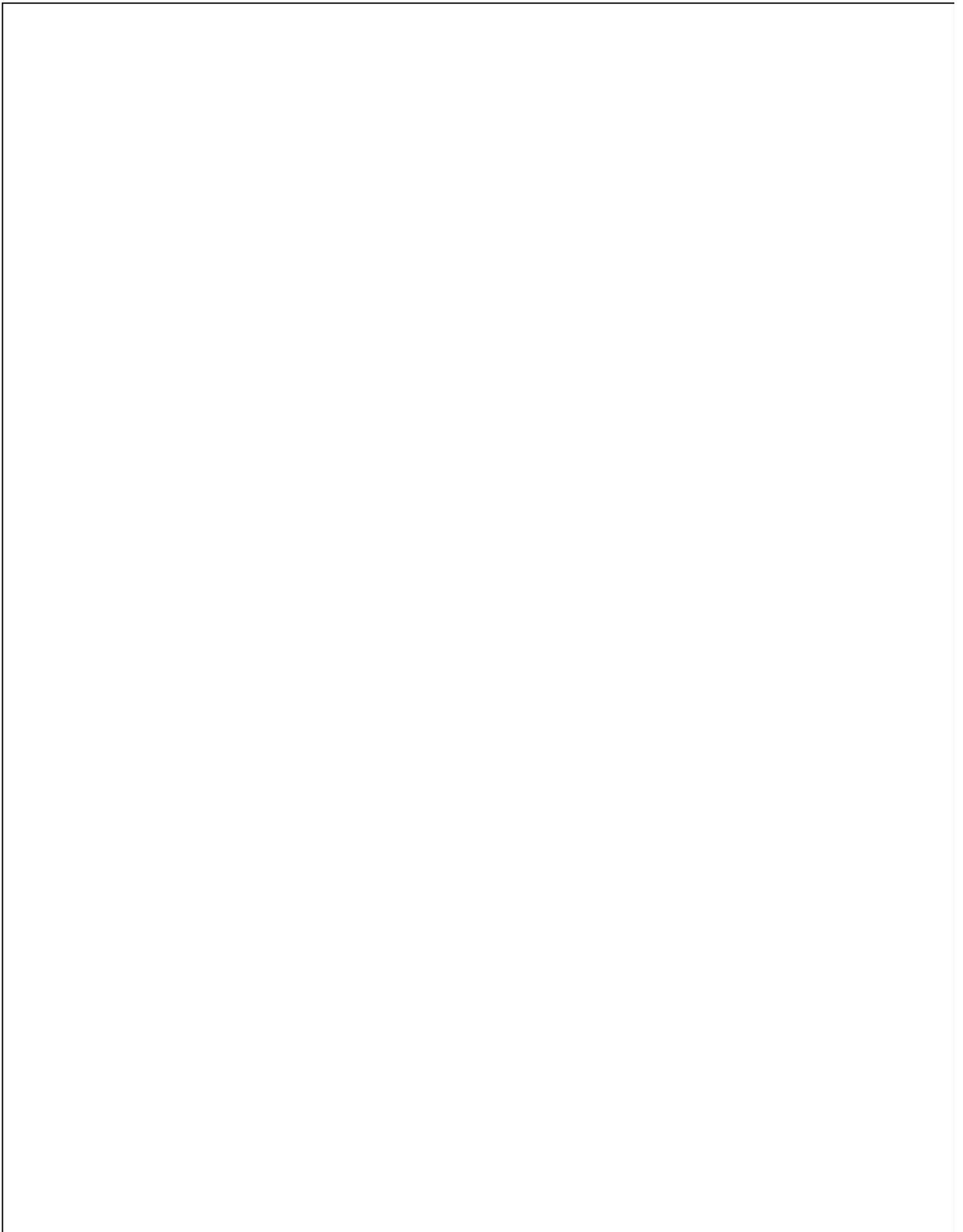
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PRIMARY SOURCES

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| **1** | Neebha Amatya, Rajesh Prajapati, Rajab Rana Magar, Ripti Shrestha. "Study of academic performance in medical students at the time of COVID-19 pandemic", Journal of Gandaki Medical College-Nepal, 2022 <br> Publication | **3**% |
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**Sp.** This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

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