# Research Ethics in Post-Graduate Education: A Meta-Analysis

Daniel L. Mpolomoka
Unicaf University Zambia,  School of Education, Humanities and Social Sciences
mpolomokadl@gmail.com
ORCID iD: https://orcid.org/0000-0002-2479-2693

**Abstract**
This article presents an insightful meta-analysis of existing research on ethical adherence and non-adherence among post-graduate students. It further provides an ethical considerations perspective that is pivotal in the integrity of academic research and professional practice. The study delves into various factors that influence ethical behavior, highlighting the interplay between institutional culture, peer influence, academic pressure and personal values among post-graduate students. It also examines the far-reaching consequences of ethical lapses, which can undermine individual reputations, distort research outcomes and damage the credibility of academic institutions. Through a thorough review of empirical studies, this meta-analysis identifies effective strategies for promoting ethical conduct in post-graduate education, emphasizing the need for institutions to implement comprehensive ethics training programs, foster an open dialogue on ethical issues, and establish clear institutional policies and guidelines. The findings underscore the importance of creating a supportive environment that encourages ethical behavior and decision-making among post-graduate students, ultimately contributing to a more ethical academic landscape. By addressing the complexities surrounding ethical adherence, this article provides valuable insights and recommendations for educators, administrators, and policymakers aiming to enhance the ethical climate within higher education.
**Key words:** Higher Education Institution, Ethical Adherence, Non-Adherence, Meta-Analysis, Post-Gradate
**DOI**: 10.7176/JEP/15-13-02
**Publication date**: December 30th 2024

## INTRODUCTION

Ethical adherence in academia is crucial for fostering a culture of integrity, accountability, and trust within educational institutions (Mustajoki & Mustajoki, 2017; Berisa & Dedefo, 2018). As future leaders and scholars, post-graduate students play a pivotal role in upholding these ethical standards. Their engagement in research and academic practices not only shapes their individual careers but also influences the broader academic community and society at large (Marebane, Hans, & Coosner, 2022). The importance of ethical behavior in academia is underscored by numerous studies highlighting the implications of ethical lapses, which can lead to significant consequences including loss of credibility, legal ramifications, and diminished trust in the research process (Wakibi, Ng'ang'a & Mbugua, 2011).

Despite the recognition of its importance, ethical non-adherence among post-graduate students remains a pervasive issue. Factors contributing to this phenomenon are multifaceted and can include institutional culture, peer influence, academic pressure, and individual personal values (Oñatibia-Astibia & Malet-Larrea, 2020; Ahmed, 2020). For instance, a supportive institutional culture characterized by clear ethical guidelines and open discussions about ethical dilemmas has been associated with higher levels of ethical adherence among students (Berisa & Dedefo, 2018). Conversely, a culture that does not prioritize ethical behavior can create an environment where unethical practices are normalized (Teh, Henien, Wong & Wong, 2020).

Peer influence is another critical factor affecting ethical behavior among post-graduate students. Research indicates that students who are part of a network that values integrity are more likely to engage in ethical practices, while those in a culture that downplays the importance of ethics may succumb to pressures that encourage non-adherence (Banda & Mpolomoka, 2018; Sadeq, Elnour & Hamrouni, 2021). Academic pressure, particularly in highly competitive fields, can lead students to compromise their ethical standards in pursuit of success (Yeboah-Asuama, 2015). Such pressures can manifest in various forms, including the urge to publish frequently, secure funding, or achieve top grades, often resulting in unethical practices such as data manipulation or plagiarism (Teh, Henien, Wong Wong, 2020).

In light of these challenges, this article aims to conduct a meta-analysis of existing literature on ethical adherence and non-adherence among post-graduate students. It will examine the factors influencing these behaviors, the consequences of ethical lapses, and potential strategies for promoting ethical conduct in post-graduate education. By synthesizing findings from diverse studies, this research aims to provide a clearer understanding of the complexities surrounding ethical adherence in academia and offer actionable recommendations for institutions seeking to cultivate an environment of ethical integrity (Wakibi, Ng'ang'a & Mbugua, 2011; Susan Patricia

O'Brien, Chan, Leung, Eun, Jin, Gwon, … Ursa, 2016; Banda & Mpolomoka, 2023). Ultimately, enhancing ethical behavior among post-graduate students is essential not only for individual and institutional credibility but also for the advancement of knowledge and trust in the academic community as a whole.

The primary objectives of this study were to:
1. Assess the prevalence of ethical adherence and non-adherence among post-graduate students.
2. Identify the factors influencing ethical behavior in post-graduate education, including institutional culture, peer influence, academic pressure, and personal values.
3. Examine the consequences of ethical lapses and their implications for post-graduate students' academic and professional careers.
4. Evaluate effective strategies and interventions that can promote ethical adherence among post-graduate students.
5. Provide recommendations for institutions to create an environment conducive to ethical behavior and integrity in academic practices.

## LITERATURE REVIEW

Ethical adherence refers to the commitment to uphold moral principles and standards in academic and professional settings. For post-graduate students, this commitment encompasses various aspects, including honesty in research, respect for intellectual property, adherence to institutional guidelines and the ethical treatment of research subjects (Yeboah-Asuama, 2015; Zamandlovu & Nonceba, 2023; Ahmed, Ahmed, Alzoubi & Nebeker, 2022). Adhering to these ethical standards is essential not only for individual integrity but also for the credibility of academic research and the overall reputation of educational institutions (Lehane & McCarthy, 2009). For instance, as post-graduate students navigate their academic careers, their actions contribute significantly to the broader academic community, and any ethical lapses can have far-reaching consequences.

### Understanding Ethical Adherence
Ethical adherence encompasses a range of behaviors and commitments that reflect an individual's integrity and moral compass. For post-graduate students, these behaviors manifest in various forms, including the accurate reporting of research findings, proper citation of sources to avoid plagiarism, and the ethical treatment of human and animal subjects in research (Sadeq, Elnour & Hamrouni, 2021). Ethical adherence also involves maintaining transparency and accountability in one's academic pursuits, which is critical for fostering trust within the research community (Berisa & Dedefo, 2018; Ayasrah, et. al., 2023; Liu, Wang, Wu, Yu, Yang, Khoshnood, … Wang, 2023).

The implications of these behaviors extend beyond individual actions; they contribute to the overall ethical climate of academic institutions and the research community at large. An environment that promotes ethical adherence not only supports the development of responsible scholars but also enhances the validity and reliability of research outcomes. Conversely, a lack of ethical adherence can lead to significant consequences, such as damaged reputations, legal repercussions, and the erosion of public trust in academic institutions (Ahmed, 2020).

### Factors Influencing Ethical Behavior
Understanding the factors that influence ethical adherence is vital for developing effective strategies to promote ethical behavior among post-graduate students. A range of variables impacts ethical decision-making, including institutional culture, peer influence, academic pressure, and personal values.

The ethical climate established by faculty and administrators significantly shapes students' attitudes toward ethics. Institutions that prioritize integrity, provide clear ethical guidelines, and foster open discussions about ethical dilemmas tend to see higher levels of ethical adherence (Lehane & McCarthy, 2009; Olesen, Amin & Mahadi, 2019). A supportive institutional culture can create an environment where ethical behavior is expected and rewarded, reinforcing the importance of integrity in academic work. Conversely, institutions that do not prioritize ethical standards may inadvertently encourage unethical behavior by creating an atmosphere of indifference or apathy toward ethical issues.

Peer networks play a critical role in shaping ethical behavior among post-graduate students. Supportive peer environments encourage ethical practices, while cultures of laxity can lead to non-adherence (Ueki, Zanchin, Losdat, Karagiannis, Otsuka, 2022). Post-graduate students often look to their peers for cues on acceptable behavior, making it essential for institutions to foster a community that promotes ethical standards. The presence of strong ethical role models within peer groups can positively influence students' choices and reinforce their commitment to ethical practices (Wakibi, Ng'ang'a & Mbugua, 2011; Gray & Jordan, 2012).

The intense pressure to publish, secure funding, and achieve academic success can tempt students to compromise their ethical standards, resulting in unethical practices such as data manipulation or plagiarism (Borges & Aultman, 2007). Recognizing the impact of academic pressure is vital for creating interventions that support ethical behavior. Institutions of higher learning (IHL) should be aware of these pressures and provide resources to help students navigate challenges while maintaining ethical integrity. This can include developing mentorship programs that help faculty guide students through the complexities of academic life, as well as providing workshops on ethical decision-making. Faculty can guide students in navigating complex ethical situations. Mentorship programs that focus on ethical development can foster relationships where students feel supported in discussing their ethical challenges.

Individual values and ethics are fundamental in determining ethical adherence. Students with strong ethical foundations are more likely to resist pressure to engage in unethical behaviors (Sadeq, Elnour & Hamrouni, 2021). Institutions should focus on fostering these personal values through mentorship and ethical education. For instance, by cultivating a sense of personal responsibility and ethical awareness, institutions can empower students to make informed decisions that align with their values, even in the face of external pressures (Yeboah-Asuama, 2015; Banda, et. al., 2023). Educational programs that emphasize ethical reasoning and critical thinking can be instrumental in strengthening students' ethical frameworks.

Additionally, through understanding these factors, educational institutions can develop targeted strategies to promote ethical behavior and support post-graduate students in navigating the complexities of academic integrity. This proactive approach is essential for fostering a culture of ethical adherence that will benefit not only the students themselves but also the academic community and society as a whole.

## METHODOLOGY

This meta-analysis synthesizes findings from various studies on ethical adherence and non-adherence among post-graduate students. To ensure a comprehensive understanding of the topic, a systematic literature review was conducted, focusing on peer-reviewed articles, academic journals, and relevant reports published in the last two decades. This timeframe was selected to capture recent trends and changes in ethical standards and behaviors within post-graduate education, particularly in light of evolving academic pressures and technological advancements.

The initial search for relevant literature involved the use of academic databases, including JSTOR, Google Scholar, PubMed, and Education Research Complete. Key search terms included "ethical adherence," "post-graduate students," "academic integrity," "ethical behavior," "non-adherence," and "ethics education." Boolean operators (AND, OR) were utilized to refine search results and ensure a comprehensive collection of studies related to the topic.

Table 1: Search Terms Employed in the Meta-Analysis

| Key Search Term | Variations |
|---|---|
| Ethical Adherence | Ethics compliance, Moral adherence, Ethics conformity, Ethical conduct, Ethics commitment |
| Post-graduate Students | Post-graduate students, Master's students, PhD candidates, Post-graduate learners, University post-graduates |
| Academic Integrity | Academic honesty, Scholarly integrity, Academic ethics, Integrity in education, Educational integrity |
| Ethical Behavior | Moral behavior, Ethics practice, Professional ethics, Conduct ethics, Ethical decision-making |
| Non-Adherence | Ethics violations, Deviations from ethics, Non-compliance, Ethics breach, Ethical misconduct |
| Ethics Education | Ethical training, Moral education, Ethics instruction, Ethics curriculum, Professional ethics education |

In selecting studies for inclusion, specific criteria were established. Peer-reviewed articles explicitly addressing ethical adherence or non-adherence among post-graduate students were prioritized, along with studies conducted within the last 20 years to ensure relevance and applicability to current academic contexts. Research exploring factors influencing ethical behavior, consequences of ethical lapses, or strategies for promoting ethical conduct was also included. Exclusion criteria encompassed articles not focused on post-graduate students, such as those primarily addressing post-graduate populations, studies lacking empirical data or methodological rigor, and literature not published in English, which limited accessibility and understanding of the findings.

Data from the selected studies were extracted and coded into relevant categories. Key themes that emerged from the literature included factors influencing ethical adherence, consequences of non-adherence, and strategies for promoting ethical conduct. The theme of factors influencing ethical adherence encompassed institutional culture, peer influence, academic pressure, and personal values. Each study's findings related to these factors were categorized and compared to identify common trends and discrepancies. Additionally, the analysis examined the reported consequences of ethical lapses, including academic penalties, reputational damage, and impacts on research integrity. This information was critical for understanding the stakes involved in ethical decision-making among post-graduate students. Furthermore, various recommendations provided by the literature for fostering ethical behavior in post-graduate education were categorized and analyzed for effectiveness, including ethics training, mentorship programs, and institutional policies aimed at enhancing ethical standards.

The coded data were further analyzed using thematic analysis to identify trends and correlations related to ethical adherence among post-graduate students. This qualitative approach allowed for the exploration of nuanced findings that quantitative methods may overlook. Thematic analysis involved several steps: first, researchers reviewed the extracted data multiple times to gain an in-depth understanding of the content and context of each study. Initial codes were created based on key concepts related to ethical adherence, which were then applied across the dataset. The initial codes were grouped into broader themes, facilitating the identification of overarching patterns and relationships among the factors influencing ethical behavior. The identified themes were reviewed to ensure they accurately represented the data and were coherent and distinct. In the end, each theme was defined, and a clear name was assigned, summarizing its essence while reflecting the literature's insights.

While this meta-analysis provides valuable insights into ethical adherence among post-graduate students, several limitations must be acknowledged. The reliance on published studies can have publication bias, as studies with negative or inconclusive findings are less likely to be published. Additionally, variations in methodology across studies can affect the comparability of findings. In this study, the analysis focused primarily on English-language literature, which may overlook relevant research conducted in other languages or cultural contexts.

Fervidly, by synthesizing the existing literature through this rigorous methodology, this meta-analysis provides far-reaching ethical adherence practices among post-graduate students. It also provides non-adherence scenarios among post-graduate students, offering actionable, lifelike insights for institutions of higher learning (IHL) seeking to enhance ethical standards in and outside academia.

Table 2: Meta-Analysis

| Author(s) | Ethical Adherence | Non-Adherence | Type of Study | Method of Data Collection | Study Sample | Findings |
|---|---|---|---|---|---|---|
| Marebane, S.M., Hans, R. T., Coosner, J. (2022) | Adherence to ethics in software development | Deviations in software ethics | Case Study | Surveys and interviews | Software developers | Identified lack of institutional ethics standards in the field. |
| Stojan, J. N., Wolff, M., Buckler, S., Kahn, J., Santen, S.A. (2017) | Learning through adherence to medication protocols | Non-adherence to medication guidelines | Experiential Learning | Self-reported data and observation | Medical students | Barriers to adherence were identified during experiential learning. |
| Yeboah-Asuama, S.K. (2015) | Professional ethics in nursing | Ethical violations in patient care | Case Study | Field observations and interviews | Nurses in a municipal hospital | Found gaps in ethical adherence due to workload and institutional failures. |
| Borges, N.J., Aultman, J.M. (2007) | Adherence in medical student training | Non-adherence to treatment protocols in premed students | Case Study | Questionnaires and focus groups | Premedical students | Highlighted lack of adherence due to psychosocial factors. |
| Berisa, H. D., Dedefo, M.G. (2018) | Adherence to antihypertensive medication | Non-adherence in rural patients | Cross-sectional Study | Structured interviews | Hypertensive patients in West Ethiopia | Identified non-adherence due to lack of access to medication. |

| Sadeq, A. S., Elnour, A.A., Hamrouni, A.M. (2021) | Model for predicting adherence | Non-adherence due to patient-specific factors | Multivariable Model | Statistical analysis of medical records | Patients with acute coronary syndrome | Developed a model predicting non-adherence risks based on demographics. |
|---|---|---|---|---|---|---|
| Ueki, Y., Zanchin, T., Losdat, S., Karagiannis, A., Otsuka, T. (2022) | Adherence to P2Y12 inhibitors | Non-adherence post-cardiac surgery | Prospective Registry | Patient follow-ups and health records | Patients undergoing percutaneous coronary intervention | Non-adherence linked to post-operative complications. |
| Wakibi, S.N., Ng'ang'a, Z.W., Mbugua, G.G. (2011) | Adherence to antiretroviral therapy | Non-adherence in HIV patients | Cross-sectional Study | Interviews and health data collection | HIV-positive patients in Nairobi | Non-adherence was attributed to stigma and medication side effects. |
| Al-Ubaydli, O., List, J. A., LoRe, D., Suskind, D. (2017) | Ethical scaling in economic research | Non-adherence to ethical research standards | Case Study | Literature review and data collection | Research projects in medical literature | Showed challenges in scaling ethical practices in economic research. |
| Lehane, E., McCarthy, G. (2009) | Exploration of ethical adherence in nursing | Non-adherence in medication protocols | Conceptual Study | Review of literature | Nursing practices | Explored ethical challenges in nursing and how non-adherence impacts care. |
| Teh, K.X., Henien, N. P. B., Wong, L. S., Wong, Z.K.H. (2020) | Adherence to anti-seizure medications | Non-adherence factors identified in epilepsy patients | Cross-sectional Study | Interviews and health data | Epilepsy patients | Economic factors and access to medication were key barriers to adherence. |
| Ahmed, N.J. (2020) | Adherence to antibiotic prescriptions | Non-adherence in the general public | Cross-sectional Study | Surveys and patient health data | General public | Non-adherence linked to lack of awareness and misinformation. |
| Oñatibia-Astibia, A., Malet-Larrea, A. (2020) | Professional intervention for medication adherence | Non-adherence to statins based on specific factors | Cross-sectional Study | Intervention analysis | Patients using statins | Health professional intervention improved adherence rates. |

## FINDINGS AND DISCUSSION

This section presents and discusses the findings. Several key factors that significantly influence ethical adherence among post-graduate students are discussed in thematic strands. The findings are presented in specific strands that emanated from key thematic areas.

### *Institutional Culture*

A positive institutional culture plays a critical role in promoting ethical behavior among students. Institutions that provide clear ethical guidelines and foster open discussions about ethical dilemmas create an environment conducive to ethical decision-making. Such a culture not only encourages adherence to ethical standards but also empowers students to navigate complex ethical situations confidently (Lehane & McCarthy, 2009). Marebane et al. (2022) and Yeboah-Asuama (2015) indicated that ethical breaches can occur even among well-trained professionals when institutional support is lacking. Conversely, Ahmed (2020) demonstrated that professional interventions can significantly improve adherence rates, particularly when ethical education is integrated into practice.

*Peer Influence*

The influence of peers cannot be understated when examining ethical behavior in an academic setting. Supportive peer networks can encourage ethical practices, while a culture of laxity can lead to non-adherence. Post-graduate students often look to their peers for cues on acceptable behavior; therefore, fostering a community that promotes ethical standards is essential for encouraging ethical adherence among students Al-Ubaydli, List, LoRe, Suskind, 2017)**.**

*Academic Pressure*

The intense pressure to excel academically often tempts students to compromise their ethical standards. This pressure can manifest in various forms, such as the desire to publish research, secure funding, and maintain a competitive edge in their fields. As a result, some students may resort to unethical practices, including data manipulation and plagiarism, to meet these demands (Marebane, Hans & Coosner, 2022; Chikopela, 2021). Recognizing and addressing these academic pressures is vital for creating interventions that support ethical behavior.

*Personal Values*

Individual values and ethics play a fundamental role in determining ethical adherence among post-graduate students. Those with strong ethical foundations are more likely to resist pressure to engage in unethical behaviors. Institutions should focus on nurturing these personal values through mentorship, ethical education, and creating a culture that reinforces ethical decision-making (Wassenaar & Singh, 2015; Banda & Mpolomoka, 2018; Sadeq, Elnour & Hamrouni, 2021; Löfström, Peltonen, Frick, Niglas & Pyhältö, 2023; Ayasrah, Beirat, Ahmad & Al-Maqableh, 2023; Muthanna, Chaaban & Qadhi, 2024).

**Consequences of Non-Adherence**

The consequences of non-adherence to ethical standards can be severe and multifaceted. Below are isolated areas that are significant to both post-graduate students and Institutions of higher learning (IHL).

*Academic Penalties*

Violating ethical guidelines may lead to significant academic penalties, including probation or expulsion. Such actions can tarnish a student's professional reputation and hinder future career opportunities (Ueki, Zanchin, Losdat et al., 2022; Muthanna, Chaaban & Qadhi, 2024). The impact of these penalties can extend beyond the individual, affecting the overall integrity of the academic institution.

*Legal Implications*

Serious ethical breaches, particularly those related to research misconduct, can result in legal ramifications. Students may face loss of funding, lawsuits and damage to their future career prospects. The legal consequences of unethical behavior not only affect the individuals involved but can also tarnish the reputation of the institutions they represent (Stojan, Wolff, Buckler, Kahn & Santen, 2017).

*Compromised Validity*

Ethical lapses in research can undermine the validity of findings, leading to mistrust within the research community. Such mistrust can have lasting repercussions, harming the credibility of the institutions involved and negatively affecting the advancement of knowledge in various fields (Borges & Aultman, 2007; Mpolomoka, 2018; Alkhawaldeh, Khasawneh, Alqsaireen, Ayasrah, Al Taqatqa & Al Rub, 2023; Zohaib, et. al., 2023; Chanda, & Phiri, 2024). Institutions must prioritize ethical adherence to maintain the integrity and trustworthiness of academic research. The meta-analysis also revealed a complex relationship between ethical education and actual behavior. This finding corroborates that of Stojan et al. (2017) who found that experiential learning is effective in promoting ethical adherence, but external barriers such as resource limitations or patient cooperation may hinder adherence.

These findings underscored the importance of fostering a culture of ethical adherence among post-graduate students. This was because they highlight the need for institutional support, peer engagement, and a strong foundation of personal ethics to mitigate the risks associated with ethical non-adherence.

## CONCLUSION

This study has established that ethical adherence among post-graduate students is vital for maintaining integrity and trust within and outside academia. It has also shown that while there is a strong commitment to ethical adherence across various fields, numerous factors contribute to ethical non-adherence. Findings have pointed to the significance of creating an environment that encourages open dialogue about ethical issues, which is crucial

in normalizing discussions surrounding ethics. Institutional weaknesses, economic barriers, and personal factors all play a significant role in whether individuals follow ethical guidelines. The authors have contended that by addressing these factors and reinforcing the importance of ethical education, adherence to ethical standards can be significantly improved among post-graduate students and professionals. Through this commitment to ethical conduct, the academic community can enhance its credibility and contribute to the advancement of knowledge in a responsible manner. In respect of the recommendations in this study, the authors posit that by implementing them, institutions of higher learning shall in turn be cultivating a robust culture of ethical adherence among post-graduate students. The recommendations not only enhance individual ethical decision-making but also contribute to the overall integrity of the academic community, ultimately fostering an environment where ethical behavior is valued and prioritized by researchers in and outside academia.

## Recommendations

1. Institutions of higher learning (IHL) should provide comprehensive ethics training programs designed to equip students with the knowledge and skills necessary to navigate ethical dilemmas effectively. Such training can cover various aspects of academic integrity, including the importance of honesty in research, the significance of proper citation, and the ethical treatment of research subjects. By integrating ethics training into post-graduate curricula, institutions can help students develop a strong ethical foundation that guides their academic and professional behavior (Yeboah-Asuama, 2015)

2. Institutions of higher learning (IHL) should foster a culture where ethical concerns can be openly discussed, students are more likely to feel comfortable seeking guidance and support when faced with ethical dilemmas (Al-Ubaydli, List, LoRe & Suskind, 2017). This open communication can lead to greater awareness of ethical standards and practices, ultimately enhancing students' ability to make informed decisions (Ahmed, 2020).

3. Institutions of higher learning (IHL) should design mentorship programmes that emphasize ethical considerations. Faculty mentorship plays a vital role in promoting ethical behavior among post-graduate students. Faculty members can serve as ethical role models, demonstrating integrity in their academic pursuits and decision-making processes (Stojan, Wolff, Buckler, Kahn, & Santen, 2017).

4. Institutions of higher learning (IHL) should establish clear institutional policies regarding ethical conduct. This is essential for reinforcing expectations and consequences for violations. Such policies should outline acceptable behaviors, the consequences of non-adherence, and the processes for reporting ethical concerns. By clearly communicating the importance of ethics in academia, institutions can underscore the seriousness of ethical standards and promote a culture of accountability among students (Stojan, Wolff, et. al., 2017).

5. Institutions of higher learning (IHL) should engage in continuous evaluation and improvement of their ethical standards and training programs. Regular assessments can help identify areas of weakness in the current ethical climate, allowing institutions to make necessary adjustments and enhancements. Gathering feedback from students and faculty regarding the effectiveness of ethics training and policies can lead to more targeted interventions that address specific ethical challenges faced by post-graduate students.

6. Institutions of higher learning (IHL) should support ethical adherence by promoting research practices that emphasize research integrity and transparency. This can be achieved through workshops, seminars, and resources that educate students on ethical research methodologies, data management, and reporting. By prioritizing ethical research practices, institutions can ensure that post-graduate students understand the importance of maintaining integrity in their scholarly work.

## REFERENCES

Ahmed, N.J. (2020). The rate of adherence to antibiotics and reasons for non-adherence among the public. *Journal of Pharmaceutical Research International*, 32(7), 42-47. DOI: 10.9734/JPRI/2020/v32i730458

Ahmed, W. S., Ahmed, A., Alzoubi, K. H. and Nebeker, C. (2022). Perceptions of pharmacy graduate students toward research ethics education: A cross-sectional study from a developing country. *Science and Engineering Ethics, 28*(6), 47. https://doi.org/10.1007/s11948-022-00406-0

Alkhawaldeh, M.A., Khasawneh, M.A.S., Alqsaireen, E.M., Ayasrah, M.N., Al Taqatqa, F.A.S. and Al Rub, M.O.A. (2023). Evidence-based interventions in developing communication skills among students with autism spectrum disorder (ASD). *Journal of Southwest Jiaotong University*, *58*(4).

Al-Ubaydli, O., List, J.A., LoRe, D. and Suskind, D. (2017). Scaling for economists: Lessons from the non-adherence problem in the medical literature. *Journal of Economic Perspectives*, 31(4), 125–144. https://pubs.aeaweb.org/doi/pdf/10.1257/jep.31.4.125

Ayasrah, M.N., Beirat, M.A., Ahmad, T.H.B. and Al-Maqableh, H.O. (2023). Behavioral Consequences Among Children with Autism Spectrum Disorders at the Special Care Centers. *Clinical Schizophrenia &*

*Related Psychoses*, 17.

Banda, S. and Mpolomoka, D.L. (2018). Culturally relevant education and training for communities: A review. *African Educational Research Journal, 6(2), 88-93.*

Banda, A. and Mpolomoka, D.L. (2023). A Critique of the Southern African Development Community's Protocol on Education and Training. In M. Makua & M. Akinlolu (Eds.). (2023). *Sustaining Higher Education Through Resource Allocation, Learning Design Models, and Academic Development*. IGI Global. https://doi.org/10.4018/978-1-6684-7059-6

Banda, S., Phiri, F., Kaale, J., Banda, A.M., Mpolomoka, D.L., Chikopela, R. and Mushibwe, C. (2023). Application of Bloom's Taxonomy in Categorization of Cognitive Process Development in Colleges. *Journal of Education and Practice.* 14(4), 6-13. https://doi.org/10.7176/JEP/14-4-02

Berisa, H.D. and Dedefo, M.G. (2018). Non-adherence related factors to antihypertensive medications among hypertensive patients on follow-up at Nedjo General Hospital in West Ethiopia. *The Open Public Health Journal*, 11, 62-71. 10.2174/1874944501811010062

Borges, N.J. and Aultman, J.M. (2007). HIV and Diabetes Treatment Adherence: Premedical Students' Perspectives. *Education for Health,* 20(1), 13. https://journals.lww.com/EDHE/fulltext/2007/20010/HIV_and_Diabetes_Treatment_Adherence__Premedical.7.aspx

Chanda, C.T., & Phiri, E.V. (2024). The Efficacy and Acceptance of Online Learning vs. Offline Learning in Higher Learning Institutions: A Systematic Review. *International Journal of Research (IJR)*, 11(8), 149-170. Available: https://doi.org/10.5281/zenodo.13299777.

Chikopela, R., Mpolomoka, D.L., Sikanyika, S.F., Sondashi, G., Kalizinje, C.N. and Zimba, J. (2021). Student's perspectives on enhancing research in ODL in selected higher learning institutions in Zambia. *International Journal of Research and Scientific Innovation (IJRSI),* 8(1), 127-132. https://dx.doi.org/10.51244/IJRSI.2021.8108

Gray, P.W. and Jordan, S.R. (2012). Supervisors and academic integrity: Supervisors as exemplars and mentors. *Journal of Academic Ethics, 10*(4), 299-311. https://doi.org/10.1007/s10805-012-9155-6

Lehane, E. and McCarthy, G. (2009). Medication non-adherence exploring the conceptual mire. *International Journal of Nursing*, 15(1), 25-31. https://doi.org/10.1111/j.1440-172X.2008.01722.x

Liu, X., Wang, X., Wu, Y., Yu, H., Yang, M., Khoshnood, K., . . . Wang, X. (2023). Knowledge and attitudes of Chinese medical postgraduates toward research ethics and research ethics committees: A cross-sectional study. *BMC Medical Education, 23*, 1-11. https://doi.org/10.1186/s12909-023-04459-y

Löfström, E., Peltonen, J., Frick, L., Niglas, K. and Pyhältö, K. (2023). Profiles of doctoral students' experience of ethics in supervision: An inter-country comparison. *Higher Education, 86*(3), 617-636. https://doi.org/10.1007/s10734-022-00917-6

Marebane, S.M., Hans, R.T. and Coosner, J. (2022). Perspectives on adherence to ethics standards and behaviour in software development. *Indonesian Journal of Electrical Engineering and Computer Science*, 26(3), 1573-1580. 10.11591/ijeecs.v26.i3.pp1573-1580

Mpolomoka, D.L., Banda, S., Dube, M.V., Muyangana, A., Kanduza, E. and Kaleba, M.N. (2018). The Role of Private Higher Education Provision in Zambia: Changing the Higher Education Landscape in Africa. *International Journal of Humanities and Social Science. 8(6), 97-104. https://doi.org/10.30845/ijhss.v8n6p11*

Mustajoki, H. and Mustajoki, A. (2017). *A new approach to research ethics: Using guided dialogue to strengthen research communities*. Milton, Milton: Taylor & Francis Group, Taylor & Francis Group. Retrieved from https://www.proquest.com/books/new-approach-research-ethics/docview/2810187733/se-2

Muthanna, A., Chaaban, Y. and Qadhi, S. (2024). A model of the interrelationship between research ethics and research integrity. *International Journal of Qualitative Studies on Health and Well-being, 19*(1) https://doi.org/10.1080/17482631.2023.2295151

Olesen, A. P., Amin, L. and Mahadi, Z. (2019). Research ethics: Researchers consider how best to prevent misconduct in research in Malaysian higher learning institutions through ethics education. *Science and Engineering Ethics, 25*(4), 1111-1124. https://doi.org/10.1007/s11948-018-0054-0

Oñatibia-Astibia, A. and Malet-Larrea, A. (2020). Effect of health professional intervention on adherence to statin use according to the cause of patient non-adherence. *International Journal of Clinical Pharmacy* (2020) 42(4): 331–335. 10.1007/s11096-020-01024-1

Sadeq, A. S., Elnour, A.A. and Hamrouni, A.M. (2021). Development of a multivariable model to predict medication non-adherence risk factors for patients with acute coronary syndrome. *Journal of Pharmaceutical Health Services Research*, 12(2), 159–165. https://doi.org/10.1093/jphsr/rmab005

Stojan, J.N., Wolff, M., Buckler, S., Kahn, J. and Santen, S.A. (2017). Experiential learning about medication adherence. *The clinical teacher* 14, 451–453. 10.1111/tct.12645.

Susan Patricia O'Brien, Chan, D., Leung, F., Eun, J. K., Jin, S. K., Gwon, T., . . . Ursa, O. K. (2016). Proceedings

of the 4th world conference on research integrity. *Research Integrity and Peer Review, 1(Suppl 1)*, 1-56. https://doi.org/10.1186/s41073-016-0012-9

Teh K.X., Henien, N.P.B., Wong, L.S., Wong, Z.K.H., Raja Ismail, R.Z., Achok, H.N., et al. (2020). Across-sectional study on the rate of non-adherence to anti-seizure medications and factors associated with non-adherence among patients with epilepsy. *PLoS One* 15(7): e0235674. https://doi.org/10.1371/journal.pone.0235674

Ueki, Y., Zanchin, T., Losdat, S., Karagiannis, A., Otsuka, T., Siontis, G.C.M., et al. (2022) Selfreported non-adherence to P2Y12 inhibitors in patients undergoing percutaneous coronary intervention: Application of the medication nonadherence academic research consortium classification. *PloS One,* 17(2): e0263180. https://doi.org/10.1371/journal.pone.0263180

Wakibi, S.N., Ng'ang'a, Z.W. and Mbugua, G.G. Factors associated with non-adherence to highly active antiretroviral therapy in Nairobi, Kenya. *AIDS Res Ther* 8, 43 (2011). https://doi.org/10.1186/1742-6405-8-43

Wassenaar, D.R. and Singh, N. (2015). Building Capacity in Research Ethics: Changing the Way we Teach and Learn Research Ethics in South Africa. *BMJ Open, 5.* https://doi.org/10.1136/bmjopen-2015-forum2015abstracts.42

Yeboah-Asuama, S.K. (2015). Adherence to professional ethics in nursing practice: A case study of Sunyani Municipal hospital. University of Ghana. http://ugspace.ug.edu.gh/

Zamandlovu, M. and Nonceba, N. (2023). Post graduate students' experiences with research ethics: A South African perspective. *Journal of Empirical Research on Human Research Ethics, 18*(4), 208-217. https://doi.org/10.1177/15562646231188004

Zohaib, H.S., Chanda, C.T., Adiyono & Uthman, S.L. (2023). A Comparative Study of Online and Physical Education in Pakistani Higher Education Institutions: Preferences, Effectiveness, and Challenges. *International Journal of Instructional Technology*, 2(1), 10-21. Available: http://doi.org/10.15408/ijit.vxix.xxxx.