

ICMS 48

48th International Conference on Multidisciplinary Studies

ICMS 48 Brussels
16–17 October 2026

Venue:
Brussels College

BOOK OF PROCEEDINGS

Scientific Committee

Marie-Therese Claes. Brussels College
Chiara Cannavale. Università Pathenope, Italy
Ina Aust. UCLouvain, Belgium
Grant Douglas. IESEG, France

ISBN 978-1-915312-23-5



Research and Publishing

48th International Conference on Multidisciplinary Studies

ICMS 48 Brussels
16–17 October 2026

Venue:
Brussels College

ISBN 978-1-915312-23-5

Every reasonable effort has been made to ensure that the material contained in this book is accurate, complete, and appropriate at the time of publication. However, the publishers, editors, and authors accept no responsibility for any errors, omissions, or for any injury, damage, loss, or financial consequences arising from the use of this publication. The views and opinions expressed by individual contributors do not necessarily reflect those of Revistia.

Typeset by Revistia

Copyright © Revistia. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any electronic or mechanical means, including information storage and retrieval systems, without the prior written permission of the publisher or author, except in the case of brief quotations used in critical articles, reviews, or scholarly references.

Revistia Publishing

Address: 11, Portland Road, London, SE25 4UF, United Kingdom

Tel : +44 1748220114

E-Mail : office@revistia.com

TABLE OF CONTENTS

ETHICS AND DECISION-MAKING: UNDERSTANDING MANAGERS' ATTITUDES	2
SANIE DODA	
NON-EPILEPTIC SEIZURES: A PRACTICAL APPROACH TO DIFFERENTIAL DIAGNOSIS	23
AIDA QUKA ^{1,2} , ILIRJANA ZEKJA ^{1,2} , JERA KRUJA ²	
THE ROLE OF SOCIAL WORKERS IN SUPPORTING CHILDREN FACING SOCIAL AND FAMILY DIFFICULTIES: PROMOTING RESILIENCE, PROTECTION, AND SOCIAL INCLUSION.....	32
ALISA BIÇOKU	
CHALLENGES IN THE DIAGNOSIS AND TREATMENT OF EPILEPSY IN ELDERLY PATIENTS	42
AIDA QUKA, ILIRJANA ZEKJA, JERA KRUJA	
STUDENTS' PERCEPTIONS OF ONLINE LEARNING IN HIGHER EDUCATION: A COMPARATIVE STUDY OF PRE AND POST PANDEMIC EXPERIENCES.....	56
MARSELA SHEHU	
FROM DIRECTIVE TO CURRICULUM: OPERATIONALISING CLINICAL TRAINING, THEORY AND STUDENT WORKLOAD IN EUROPEAN UNDERGRADUATE NURSING PROGRAMMES—A COMPARATIVE SCOPING REVIEW	68
ERINA HILAJ ^{1*} , AGIM KOCIRAJ ¹ , KLEVA SHPATI ² , ERDA QORRI ³ , JUVENTINA NGJELA ¹	
TERMINOLOGICAL ANALYSIS AND THEMATIC TRAJECTORIES IN RESEARCH PROJECTS AT THE FACULTAD DE CIENCIAS NATURALES Y MUSEO (UNLP): 2018–2023 PERIOD	82
EDGARDO ALBERTO STUBBS	
RELATIONSHIP BETWEEN NATALITY AND ITS INFLUENCING FACTORS	83
SARA ERIKSEN	

Ethics and Decision-Making: Understanding Managers' Attitudes

Sanie Doda

Management Department, Business Faculty, University "A. Moisiu", Durrës, Albania
saniedoda@uamd.edu.al

Abstract

Ethical decision-making represents a central dimension of managerial activity, particularly in sectors where professional responsibility, organizational performance, and stakeholder trust are closely interconnected. This study examines managers' attitudes toward ethical decision-making, with a specific focus on the **deontological** and **teleological** approaches. The research aims to identify whether managers tend to base their ethical judgments primarily on moral principles, duties, and rules, or on the consequences and outcomes of their decisions. The study adopts a **quantitative research design** and is based on primary data collected through a structured questionnaire distributed to managers in the **banking sector**. The questionnaire included ten Likert-scale statements designed to measure managers' ethical orientations, alongside a section collecting demographic and professional information. In total, **338 questionnaires** were distributed, of which **291 valid responses** were collected, resulting in a response rate of **86%**. The empirical findings indicate that managers show a stronger tendency toward **teleological reasoning** than toward deontological reasoning. While respondents acknowledged the importance of organizational rules, professional duties, honesty, and fairness, they appeared more likely to evaluate ethical decisions in terms of their consequences, benefits, and practical outcomes. Overall, the study suggests that managers in the banking sector adopt a predominantly outcome-oriented approach to ethical decision-making, while still recognizing the relevance of ethical norms and professional responsibilities.

Keywords: decision-making, managers, ethics, deontological approach, teleological approach

1. Introduction

Ethics plays a central role in managerial decision-making, as managers are frequently required to make choices that affect employees, customers, shareholders, and society at large. In contemporary organizations, decision-making is rarely limited to technical efficiency or financial performance; it also involves moral judgment, responsibility, and the ability to balance competing interests in a fair and socially responsible manner (Markus & Hargrave, 2021). For this reason, the study of ethics has become essential to understanding how managers evaluate dilemmas, justify their choices, and shape organizational behavior through their attitudes and actions.

According to Osmani & Doda (2025a), managerial decision-making refers to the process through which managers identify problems, assess alternatives, and select courses of action that influence both organizational outcomes and stakeholder relationships. This process is not purely rational or mechanical, but is shaped by multiple factors, including personal values, professional experience, organizational culture, and the external environment in which managers operate. In practice, managers often face situations characterized by uncertainty, competing priorities, limited resources, and pressure to achieve results (Osmani & Doda, 2025b). Consequently, decision-making in management extends beyond operational problem-solving and strategic planning; it also requires ethical reflection, accountability, and the ability to consider the broader implications of decisions for individuals and institutions.

Ethics can be broadly defined as the branch of philosophy concerned with moral principles, values, and standards that guide human conduct. It seeks to distinguish right from wrong and to determine how individuals ought to act in situations involving conflict, responsibility, and choice. In the context of management, ethics is particularly significant because managers occupy positions of authority and influence (Dess et al., 2021). Their decisions do not merely determine organizational performance, but also shape workplace culture, stakeholder trust, corporate reputation, and long-term sustainability (Bateman & Konopaske, 2024). Consequently, managers' attitudes toward ethics can significantly influence whether decisions are guided by integrity, fairness, accountability, and respect for others, or by purely instrumental and self-interested considerations.

Among the major ethical frameworks that inform decision-making, deontological and teleological approaches are especially important. The deontological perspective evaluates actions according to duties, rules, and moral principles rather than their consequences (Rosenstand, 2024). From this standpoint, a manager should act in accordance with ethical obligations such as honesty, justice, transparency, and respect for human dignity, even when doing so may not produce the most advantageous short-term result. By contrast, the teleological approach assesses the morality of a decision based on its outcomes (Chappell et al., 2024). In managerial

settings, this often means evaluating whether a decision maximizes benefits, minimizes harm, or promotes the greatest good for the greatest number of stakeholders.

These two approaches provide distinct yet complementary lenses through which managerial behavior can be understood. While deontology emphasizes principle-based conduct and adherence to moral duties, teleology highlights practical consequences and the broader impact of decisions on organizational and social welfare. Examining managers' attitudes through these ethical frameworks is therefore essential for understanding how moral reasoning operates in business environments. It also helps explain why managers facing similar situations may reach different decisions depending on the values, assumptions, and ethical priorities that shape their judgment. In this regard, ethics is not merely an abstract philosophical concern, but a practical and indispensable dimension of effective and responsible management.

2. Aim of the study and research questions

The aim of this study is to examine the role of ethics in managerial decision-making by exploring managers' attitudes toward ethical issues and the factors that influence their moral judgments in organizational contexts. More specifically, the study seeks to analyze how managers approach ethical dilemmas in the workplace and how their decisions may reflect deontological or teleological patterns of reasoning. By focusing on the relationship between ethics and decision-making, the study aims to contribute to a better understanding of how moral values, organizational pressures, and professional responsibilities shape managerial behavior. Ultimately, the paper seeks to highlight the importance of ethical awareness in management and its implications for responsible leadership, stakeholder trust, and organizational sustainability.

In order to achieve the aim of the study and examine the relationship between managerial perceptions and two main ethics' approaches, the following research questions are addressed:

- How do managers' attitudes influence ethical decision-making in organizational settings?
- What role do moral values and ethical principles play in managers' decision-making processes?
- To what extent can managerial decisions be explained through deontological and teleological ethical approaches?

3. Literature review

The deontological approach classifies decisions as either right or wrong by focusing on the decisions themselves, regardless of whether their consequences are good or

bad. It is based on universal moral principles that should be applied by everyone (Khasanova, 2024). Therefore, it distinguishes between right and wrong in a way that is considered valid for all individuals.

One of the main representatives of the deontological approach is Kant, whose ethical theory is based on duty and moral obligation. According to Kant (1785/1964), an action or decision is morally right if it is performed in accordance with moral law, rather than because of the consequences it may produce. In this sense, moral obligations and rules are derived from principles that must be respected regardless of the outcome (Thorpe, 2024).

Kant (1785/1964) argues that, for a decision to be considered morally right, the decision-maker must act from duty, and the value of the action must lie in its intention rather than in its results. In other words, things that are commonly regarded as good are not necessarily good in themselves. For example, pleasure cannot be considered morally good if it comes from seeing others suffer. Likewise, the consequences of a decision cannot be used as the criterion for judging whether it is right or wrong. What must be examined instead are the motives and reasons that lead a person to act in a certain way (Schadow, 2022). As a result, a decision may be wrong in itself even if it produces good consequences, while a decision that is right in itself may, in practice, lead to negative consequences. Decision-making should therefore be guided by reason rather than by emotions. Moral choices should not be based solely on what seems right for one individual, but on what could be considered right for everyone (Johnson & Curreton, 2022). The question each person should ask is: Would I want everyone else to make the same decision that I am making? If the answer is yes, then the decision can be considered morally right; if the answer is no, then it should be regarded as morally wrong. Another important aspect of Kant's theory concerns the way we treat other people (Mansouri, 2024). Very often, one person may perceive another merely as a means of achieving a certain goal. Such an attitude dehumanizes individuals and reduces them to objects. According to Kant, this should be avoided, because every person should be treated as an end in themselves and never simply as a means to an end.

Another important representative of the deontological approach is W. D. Ross (1930). Ross identifies several moral obligations or duties that should guide human behavior and decision-making:

- **The duty of beneficence:** the obligation to help others;
- **The duty of non-maleficence:** the obligation not to hurt or harm others;
- **The duty of justice:** the obligation to ensure that each individual receives what he or she deserves;

- **The duty of self-improvement:** the obligation of each person to improve themselves;
- **The duty of reparation:** the obligation to make amends when one has acted wrongly toward someone;
- **The duty of gratitude:** the obligation to help those who have helped and supported us in the past;
- **The duty of fidelity or promise-keeping:** the obligation to act in accordance with promises made and to tell the truth.

Ross (1930) distinguishes between *prima facie* duties and actual or overriding duties. In a particular situation, one duty may be overridden by another duty that is more important in that context. This distinction is necessary because it is often difficult to behave or make decisions in a way that satisfies all moral duties at the same time (Tohaneanu, 2015). In many cases, duties may conflict with one another, and individuals must determine which duty has the greatest moral weight in that specific situation (McNaughton & Rawling, 2026).

The deontological approach has also been subject to criticism. Some researchers argue that morality is a human invention designed to guide behavior and decision-making, and that moral rules cannot be truly universal or equally accepted and respected by all individuals in every situation (Körner & Deutsch, 2023). There are many examples that create what are often called deontological paradoxes. For instance, most people agree that murder is morally wrong, yet some may still support the death penalty. This suggests that moral judgments can be subjective, as they often reflect individual needs, values, and beliefs.

Another criticism of the deontological approach is that its rules or conditional obligations make it somewhat unsystematic, since it does not always clearly indicate the procedure that should be followed in a particular situation in order to determine the most morally correct action or decision. Furthermore, these duties or principles may come into conflict with one another, and deontological theories do not always explain which principle should take priority. Under these conditions, critics argue that the deontological approach does not always provide a sufficiently clear guide for action and decision-making (Baron & Goodwin, 2020).

The teleological approach, by contrast, is closely linked to consequences. According to this perspective, whether a decision is right or wrong depends on the results it produces (Scott, 2022). In this sense, teleology is the opposite of deontology. An action or decision is not judged as right or wrong because of its intrinsic nature, but because of the consequences it generates (Tugby, 2024). Put simply, when a person is faced with a situation that requires a choice among several alternatives, the best option is the one whose consequences are judged to be the most favorable. Therefore,

if a behavior or decision produces a result that the individual desires or that brings utility, it is considered right; if it leads to undesirable consequences, it is considered wrong. Supporters of the teleological approach maintain that it is impossible to create a universal list of right and wrong behaviors that would be accepted by everyone and applicable to every situation.

Within the teleological approach, two main subdivisions are often distinguished: utilitarianism and virtue ethics. According to utilitarianism, a behavior or decision is morally right depending on how beneficial or desirable its consequences are (Triantari & Vavouras, 2024). Virtue ethics, by contrast, evaluates actions in relation to virtues or moral character traits, asking whether a behavior is consistent with or contrary to those virtues (Yuan et al., 2023).

An important component of utilitarianism is hedonism. Hedonism evaluates a behavior or decision as right or wrong on the basis of its consequences in terms of happiness and unhappiness, or pleasure and pain (Sharmila Devi & Perumandla, 2023). The main representatives of hedonism are Bentham and Mill, although they differ in their views. Bentham argues that pleasure and pain, happiness and unhappiness, can be measured in terms of intensity, duration, and probability of occurrence (Sverdlik, 2023). In this way, he developed what is known as quantitative hedonism. Mill, however, criticizes this view by arguing that it fails to distinguish between different types of pleasure. Through the development of qualitative hedonism, he maintains that not all pleasures have the same value (Bessais, 2025).

A central feature of hedonism, whether quantitative or qualitative, is that it relies exclusively on happiness and pleasure as the criteria for judging actions. However, there are many other factors that may be used to determine whether a decision is right or wrong (Opp, 2024). In such cases, we speak of multiple utilitarianism, which takes into account a broader range of values and consequences. Two further forms of utilitarianism can also be distinguished: egoistic utilitarianism and altruistic utilitarianism. Egoistic utilitarianism occurs when, before making a decision, the individual considers only those consequences that affect themselves and the people closest to them (Elhajjar et al., 2025). Altruistic utilitarianism, by contrast, requires the decision-maker to consider the consequences of each alternative for all the parties involved and to choose the one that produces the greatest benefit overall (Deligonul & Cavusgil, 2025).

In the ethics literature, other forms of utilitarianism are identified as act utilitarianism and rule utilitarianism (Kaino, 2023). According to the first, in order to determine whether a decision is right or wrong, the utilitarian principle must be applied. A decision is considered ethical if it produces the greatest amount of benefit for the greatest number of people (Meacham, 2022). In this case, the decision-making process appears relatively straightforward: after identifying the possible alternatives, the decision-maker lists the positive and negative consequences of each option,

evaluates their utility, compares them, and then chooses the alternative that maximizes overall benefit.

This may be considered the classic version of utilitarianism, but it has been widely criticized (Osmani, 2017). First, act utilitarianism requires highly developed judgment by the decision-maker. All possible alternatives and their consequences must be identified, and the utility of each consequence must be assessed in order to determine which option will generate the greatest benefit for the greatest number of people. Second, act utilitarianism grants a great deal of freedom in decision-making. Since the main goal is to maximize utility, the decision-maker may, in some circumstances, violate moral principles or rules if doing so would lead to a better outcome. In this sense, act utilitarianism may appear to justify the idea that the ends justify the means. Third, it is a very demanding theory, because it requires the decision-maker to invest significant time, energy, and resources to maximize utility for all those affected by the decision.

The other form, rule utilitarianism, which emerged partly as an attempt to overcome the limitations of act utilitarianism considers that a decision is right if it is consistent with the utilitarian principle while also respecting moral rules. In this case, the key task for the decision-maker is not simply to identify the alternative that will generate the greatest utility, but rather to determine which moral rules, if generally followed, would produce the greatest overall benefit (Williams, 2023).

According to Osmani (2017), rule utilitarianism simplifies and speeds up decision-making because the individual is guided by previously established rules and principles rather than having to calculate the consequences of every action from scratch. The process usually involves two stages. First, moral rules that are believed to produce the greatest good for the greatest number of people are identified. Second, when faced with a concrete situation, the decision-maker must choose the course of action that is both consistent with the utilitarian principle and in accordance with those previously established. In this way, rule utilitarianism seeks to combine concern for consequences with respect for moral principles (Maier et al., 2026).

Virtues are attitudes or character traits that enable individuals to behave and make decisions that help them achieve their highest potential (Mejia & Skorborg, 2022). Honesty, courage, compassion, generosity, and loyalty are common examples of virtues. In many ways, virtues are similar to habits: once they are acquired and developed, they become stable characteristics of the individual. According to the virtue ethics approach, a person who has cultivated virtues will naturally be inclined to act and make decisions that are consistent with moral principles (Morrell & Dahlmann, 2023). In other words, such an individual is more likely to behave ethically. When faced with a decision, the central question is not simply “What should I do?” but rather, “What kind of person should I be?” For this reason, character plays a fundamental role in evaluating whether decisions or behaviors are morally right or

wrong. The roots of virtue ethics can be traced back to the philosophy of Plato and, above all, Aristotle. Supporters of this approach emphasize that thought, emotion, and action should be harmoniously integrated. In this way, the decision-maker acts in accordance with both moral principles and personal character, so that there is no conflict between “what I want” and “what I ought to do” (Slote, 2023). Virtue ethicists also stress the importance of distinguishing between virtues and vices (Zagzebski, 2023). Virtues guide individuals toward morally right and good behavior, whereas vices lead them toward wrong or harmful actions and decisions. Aristotle, in particular, distinguishes between two main categories of virtues: moral virtues and intellectual virtues (Cuguerò-Escofet & Rosanas, 2020). Moral virtues are related to human conduct and behavior, while intellectual virtues reflect excellence in thought, reasoning, and understanding.

4. Research methodology

This study adopts a **quantitative research design** to examine managers’ attitudes toward ethical decision-making, with particular focus on the **deontological** and **teleological** approaches. A quantitative approach was considered appropriate because the purpose of the study is to measure and compare managers’ perceptions in a structured and systematic way. The research is based on the collection of primary data through a questionnaire administered to managers in the banking sector.

The **questionnaire** was selected as the main research instrument because it allows the collection of standardized data from a relatively large number of respondents and is particularly suitable for investigating attitudes, perceptions, and preferences. It also enables the researcher to summarize and compare responses statistically. The questionnaire used in this study consisted of two sections. The first section gathered demographic and professional information about the respondents, such as age, gender, education, managerial position, and years of experience. The second section included **ten statements measured through a five-point Likert scale**, ranging from **1 = strongly disagree** to **5 = strongly agree**. The statements were designed to capture managers’ ethical orientations: the first five reflected **deontological reasoning**, while the last five reflected **teleological reasoning**.

Particular attention was paid to the **formulation of the questionnaire items**, as the validity of the findings depends largely on the clarity and relevance of the questions. The statements were developed on the basis of the theoretical framework of the study and were intended to translate the concepts of deontological and teleological ethics into practical managerial situations. Care was taken to use **clear, concise, and neutral language**, avoiding technical philosophical terminology that might create confusion for respondents. The wording of the questions was also designed to reduce bias and to avoid directing participants toward a particular answer. Since ethical issues can be sensitive, especially in professional contexts, neutral wording was

considered essential in order to encourage honest responses and reduce the pressure of socially desirable answers.

The empirical analysis focuses on the **banking sector**, which was selected because it represents a context in which ethical decision-making is particularly important. Managers in banking institutions operate in a highly regulated environment characterized by professional duties, internal procedures, confidentiality requirements, customer trust, and performance pressures. As a result, they are often confronted with situations where they must balance rules, moral obligations, organizational goals, and the consequences of their decisions. This makes the banking sector especially relevant for studying the tension between deontological and teleological approaches to ethics. Since it was difficult to obtain a complete list of all managers and access to respondents was limited, the study relied on a **non-probability convenience sampling method**. Participants were selected based on their accessibility and willingness to participate in the research. Although this method does not ensure full representativeness, it was considered appropriate given the exploratory nature of the study and the practical constraints of data collection. In total, **338 questionnaires were distributed and 291 were collected**, resulting in a response rate of **86%**.

5. Empirical findings

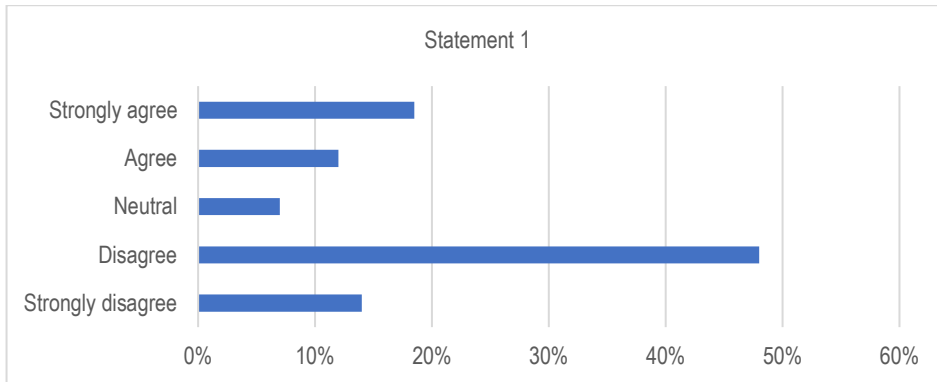
Through the distribution of the questionnaires, the information collected tries to shed light on managers' preferences on ethical decision-making and their attitudes toward deontological and teleological approach, based on the participants' experiences and perceptions. Following, through tables and charts are summarized the data collected for each statement included in the questionnaire.

1: In managerial decision-making, following rules and ethical principles is more important than achieving beneficial outcomes.

Table 1. Number of responses for each scale (Statement 1)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
41	139	21	36	54

Figure 1. Percentage of responses for each scale (Statement 1)



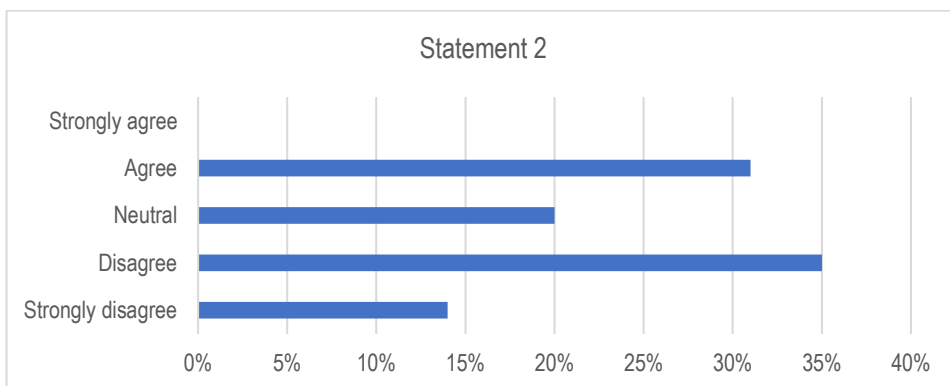
As we can note from Figure 1, 31% of the participants agree and strongly agree with the opinion that when making decisions, rules and ethical principles are more important than possible benefits. However, 7% of participants have a neutral orientation toward statement 1, while 62% of them disagree or strongly disagree with this opinion.

2: A manager should never violate moral principles, even if doing so would benefit the organization.

Table 2. Number of responses for each scale (Statement 2)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
42	102	58	89	0

Figure 2. Percentage of responses for each scale (Statement 2)



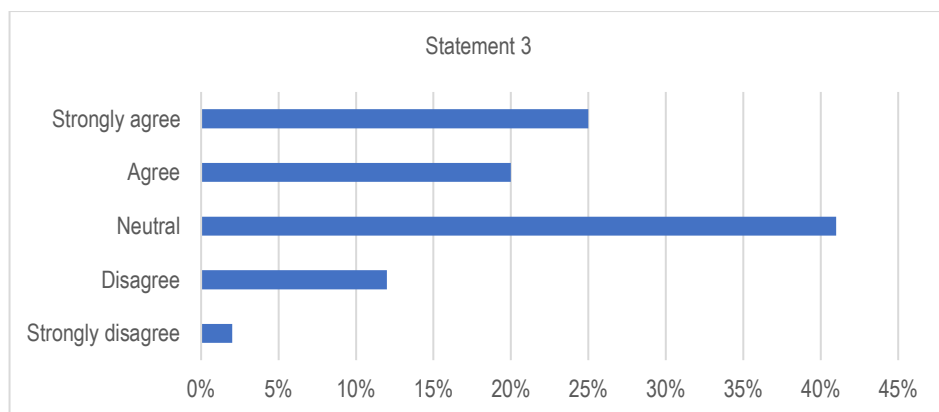
From Table 2 and Figure 2, we can easily notice that 31% of the participants agree that moral principles should never be violated, even if there would be benefits for organization. However, we must underline that 49% of the managers disagree and strongly disagree with this statement, while a high percentage of them, 20%, are not willing to express their views.

3: Honesty and fairness should guide managerial decisions regardless of the consequences.

Table 3. Number of responses for each scale (Statement 3)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6	36	118	59	72

Figure 3. Percentage of responses for each scale (Statement 3)



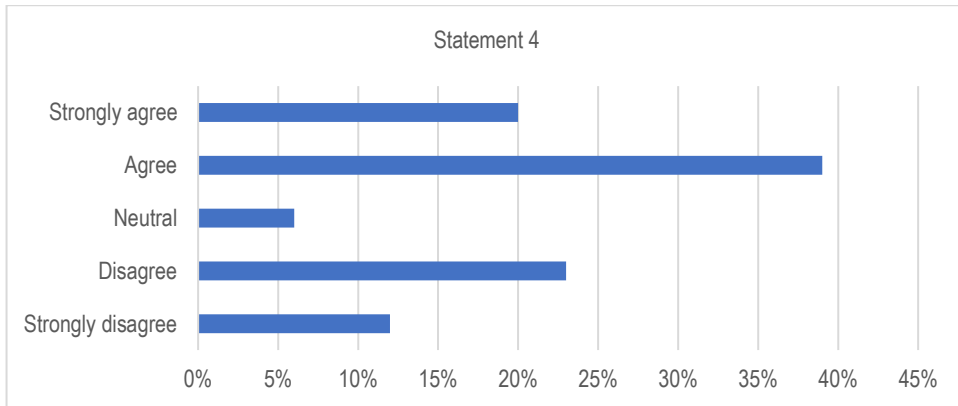
The results of Table 3 and Figure 3 show that 45% of the participants believe that honesty and fairness should guide managerial decisions and not their possible consequences. 14% of managers disagree and strongly disagree with this point of view, while a high percentage, 41%, prefer to express a neutral orientation.

4: Respecting organizational rules and professional duties is essential for making ethical decisions.

Table 4. Number of responses for each scale (Statement 4)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
35	67	18	112	59

Figure 4. Percentage of responses for each scale (Statement 4)



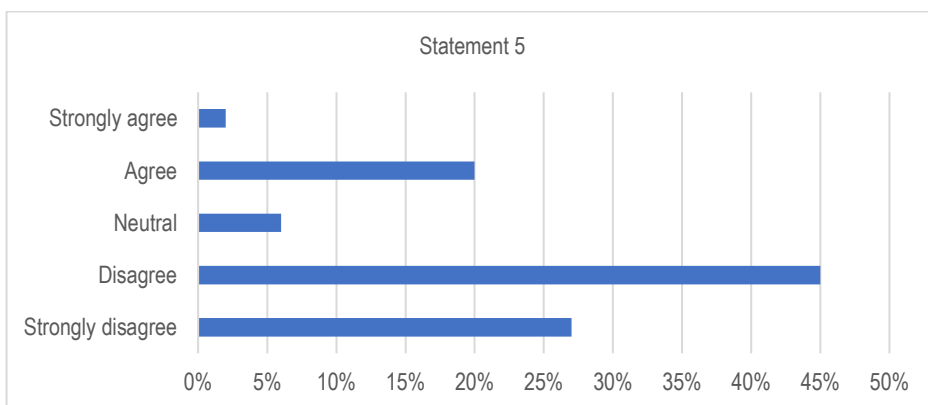
According to deontological approach, respecting organizational rules and professional duties is essential for ethical decisions. The results of the current study show that 59% of the participants agree and strongly agree with this statement, 35% disagree and strongly disagree, while 6% have a neutral attitude.

5: Some actions are ethically wrong even they produce positive results for the company.

Table 5. Number of responses for each scale (Statement 5)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
78	131	17	58	7

Figure 5. Percentage of responses for each scale (Statement 5)



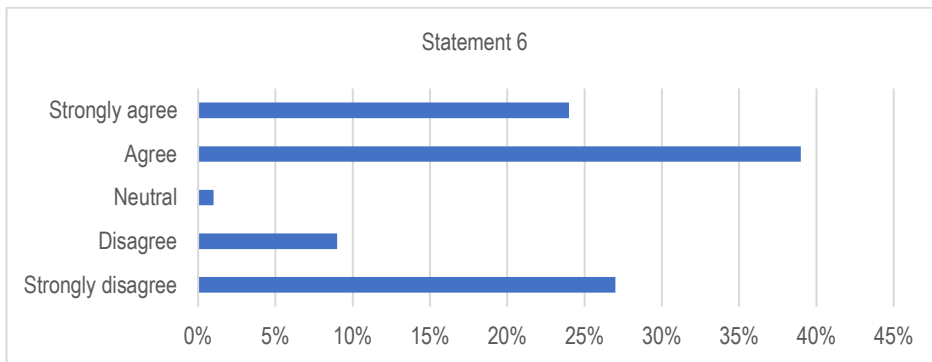
22% of participants of the current research admit that the some decisions are not ethical regardless of their positive results for the company. However, 72% of them do not agree with this tendency, and 6% show a neutral orientation.

6: When making ethical decisions, managers should focus primarily on the consequences of their actions.

Table 6. Number of responses for each scale (Statement 6)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
79	27	4	112	69

Figure 6. Percentage of responses for each scale (Statement 6)



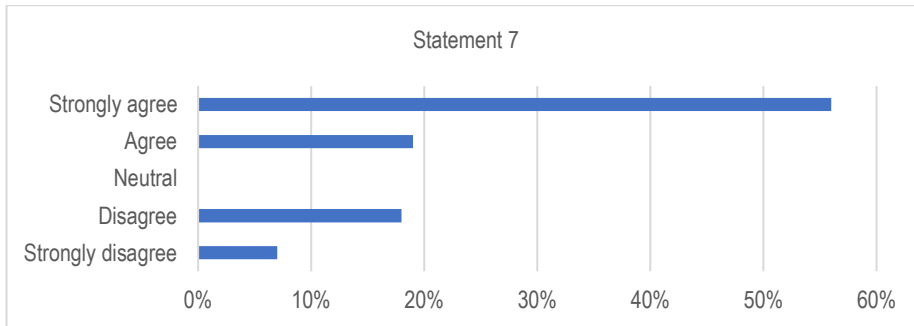
Teleological approach focuses on decision's consequences. 63% of the participants in the current research agree and strongly agree that possible consequences should be the focus during the decision-making process. On the other hand, 1% of managers maintain a neutral attitude, and 36% disagree and strongly disagree with this decision-making tendency.

7: A decision can be considered ethical if it produces the greatest overall benefit for the organization and its stakeholders.

Table 7. Number of responses for each scale (Statement 7)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
21	52	0	54	164

Figure 7. Percentage of responses for each scale (Statement 7)



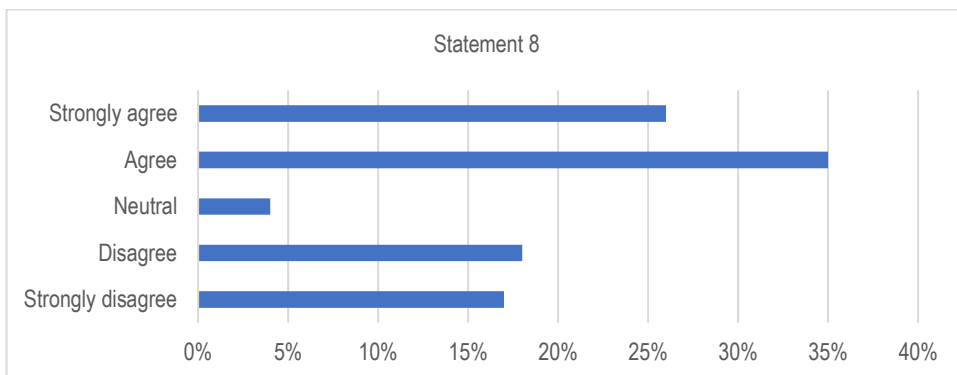
The utilitarianization rule stands at the core of teleological approach. 75% of the participants of the current research show a clear teleological orientation, while 25% of them disagree with this rule.

8: In some situations, breaking a rule may be justified if it leads to better outcomes.

Table 8. Number of responses for each scale (Statement 8)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
49	53	11	103	75

Figure 8. Percentage of responses for each scale (Statement 8)



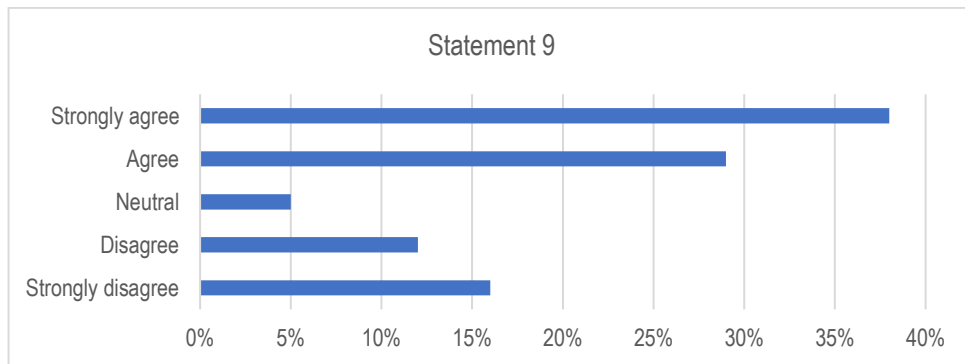
61% of the managers believe that breaking decision-making rules or procedures can be justified by better outcomes, 4% of them have a neutral tendency, while 35% of participants disagree or strongly disagree with statement 8.

9: Managers should evaluate ethical dilemmas by comparing the potential costs and benefits of each option.

Table 9. Number of responses for each scale (Statement 9)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
47	34	14	86	110

Figure 9. Percentage of responses for each scale (Statement 9)



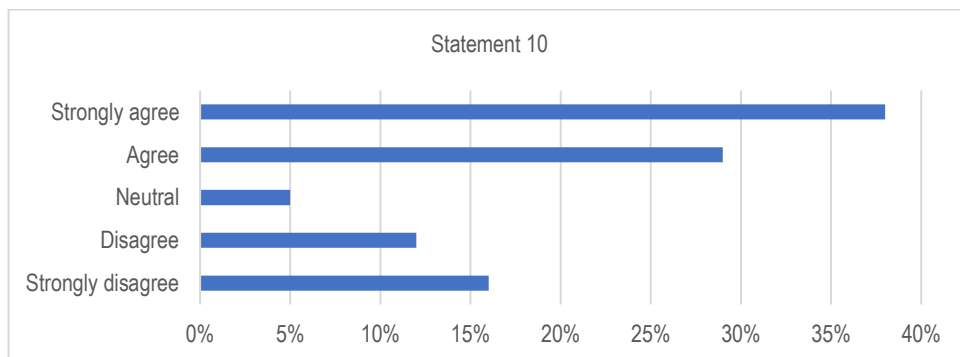
67% of participants believe that in the case of ethical dilemmas a careful cost-benefit analysis should be made. However, 28% of managers in this study disagree or strongly disagree with this tendency, while 5% of them have a neutral attitude.

10: The ethical value of a managerial decision depends largely on its final results.

Table 10. Number of responses for each scale (Statement 10)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
21	42	14	67	147

Figure 10. Percentage of responses for each scale (Statement 10)



Referring to statement 10, 74% of the participants believe that to assess if a decision is ethical or not, managers should focus on its results. On the other hand, 21% of them disagree or strongly disagree with this tendency and 5% show a neutral inclination.

6. Conclusion

This study examined managers' attitudes toward ethical decision-making, with particular attention to the deontological and teleological approaches. Its main objective was to identify whether managers tend to evaluate ethical decisions primarily through moral duties, rules, and principles, or whether they are more strongly influenced by the consequences and outcomes of their actions.

The empirical findings indicate that the managers included in the study show a stronger preference for teleological reasoning than for deontological reasoning. Although some support for deontological values can be identified, the overall pattern of responses suggests that managers are more likely to assess ethical decisions according to their consequences, benefits, and practical outcomes rather than according to fixed moral principles or unconditional duties. This conclusion becomes evident when comparing the responses to the first five statements, which reflect deontological assumptions, with the final five statements, which capture teleological reasoning.

With regard to the deontological dimension, the findings reveal only moderate and somewhat inconsistent support. The first statement proposed that, in managerial decision-making, following rules and ethical principles is more important than achieving beneficial outcomes. Only 31% of respondents agreed with this statement, while 62% disagreed. A similar pattern emerged in relation to the second statement, which asserted that a manager should never violate moral principles, even if doing so would benefit the organization. Again, only 31% agreed, while 49% disagreed and 20% adopted a neutral position. These findings suggest that a considerable proportion of managers do not support a rigid rule-based understanding of ethics and may be willing to compromise principles when organizational interests are at stake. The third statement, according to which honesty and fairness should guide managerial decisions regardless of the consequences, produced a more balanced result. While 45% of respondents agreed, 41% selected a neutral position and 14% disagreed. This finding suggests that managers recognize the importance of honesty and fairness, but many are hesitant to fully endorse the idea that such values should always take priority over outcomes. The fourth statement generated the strongest support among the deontological items, with 59% of respondents agreeing that respecting organizational rules and professional duties is essential for ethical decision-making. This result reflects the importance of compliance, professional obligations, and formal procedures in the managerial environment, especially within the banking sector. However, the fifth statement, which argued that some actions are ethically wrong even if they produce positive results for the company, received

support from only 22% of respondents, while 72% disagreed. This result is particularly significant because it suggests that most managers do not adopt the deontological view that some actions are inherently wrong regardless of their consequences.

In contrast, the findings related to the teleological approach reveal a much stronger and more coherent pattern. The sixth statement, which proposed that managers should focus primarily on the consequences of their actions when making ethical decisions, was supported by 63% of respondents. Similarly, 75% agreed with the seventh statement, according to which a decision can be considered ethical if it produces the greatest overall benefit for the organization and its stakeholders. This is one of the clearest findings of the study, as it reflects the utilitarian logic at the core of teleological ethics. The eighth statement further confirms this orientation. A total of 61% of respondents agreed that, in some situations, breaking a rule may be justified if it leads to better outcomes, while 35% disagreed. This suggests that many managers do not view rules as absolute moral boundaries, but rather as standards that may be overridden when more favorable consequences are expected. The ninth statement, which emphasized the importance of comparing costs and benefits when evaluating ethical dilemmas, was supported by 67% of respondents, again indicating a pragmatic and consequence-oriented mode of reasoning. Finally, 74% of respondents agreed with the tenth statement, which asserted that the ethical value of a managerial decision depends largely on its final results. Together, these findings clearly demonstrate that managers are more inclined to define ethicality in terms of outcomes rather than in terms of absolute moral duties or principles.

Taken as a whole, the empirical evidence allows several important conclusions to be drawn. First, the study shows that teleological reasoning appears to be the dominant ethical orientation among managers in the selected sample. Managers seem more willing to justify decisions on the basis of beneficial consequences, organizational outcomes, and stakeholder utility than on the basis of unconditional moral rules. Second, the findings also suggest that deontological values have not disappeared entirely from managerial thinking. Respect for organizational rules and professional duties remains important, and a considerable proportion of respondents also recognize the relevance of honesty and fairness. However, these deontological elements appear less dominant and less consistent than teleological considerations.

Another significant conclusion concerns the complexity of ethical decision-making in managerial settings. The relatively high number of neutral responses to some deontological statements suggests either a reluctance to express a clear position on morally sensitive issues or an awareness that ethical dilemmas in practice rarely allow purely principle-based judgments. This interpretation is especially relevant in the banking sector, where managers often operate under pressure from performance targets, customer expectations, risk management requirements, and regulatory

obligations. In such an environment, ethical decision-making is likely to involve a balance between principles and consequences, even if outcomes appear to play the more decisive role.

The research contributes to a better understanding of ethical decision-making in managerial contexts and highlights the need for organizations to foster an ethical culture that balances both principles and consequences.

References

- 1] Baron, J., & Goodwin, G. P. (2020). Consequences, norms, and inaction: A critical analysis. *Judgment and Decision Making*, 15(3), 421-442.
- 2] Bateman, T.S., & Konopaske, R. (2024). *M: Management* (2024 release). McGraw Hill.
- 3] Bessais, D. (2025, February 20). *Utilitarianism of Bentham and Mill's ethical influence and critics*. Social Science Research Network. <https://dx.doi.org/10.2139/ssrn.5147979>
- 4] Chappell, R., Meissner, D., & MacAskill, W. (2024). *An introduction to utilitarianism: From theory to practice*. Hackett Publishing Company.
- 5] Cugueró-Escofet, N., & Rosanas, J. M. (2020, February 10). *The relative role of the intellectual and moral virtues in sustainable management decisions: The case of practical wisdom and justice*. Social Science Research Network. <https://dx.doi.org/10.2139/ssrn.3694994>
- 6] Deligonul, S., & Cavusgil, E. (2025). Approaches to ethical decision-making: Contrasting rationality-based models versus moral intuitionism. *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, 42(4), 605-623. <https://doi.org/10.1002/cjas.70014>
- 7] Dess, G., McNamara, G., Eisner, A., & Lee, S. H. (2021). *Strategic management: Text and cases* (10th ed.). McGraw-Hill.
- 8] Elhajjar, S., Yacoub, L., & Borna, S. (2025). Employee decision-making: The role of egoism and altruism in corporate spending behavior. *International Journal of Ethics and Systems*. Advance online publication. <https://doi.org/10.1108/IJOES-07-2025-0407>
- 9] Johnson, R., & Cureton, A. (2022). Kant's moral philosophy. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Fall 2022 ed.). Stanford University. <https://plato.stanford.edu/archives/fall2022/entries/kant-moral/>

- 10] Kaino, M. (2023). Utilitarianism. In M. Sellers & S. Kirste (Eds.), *Encyclopedia of the philosophy of law and social philosophy* (pp. 3534–3541). Springer, Dordrecht. https://doi.org/10.1007/978-94-007-6519-1_999
- 11] Kant, I. (1964). *Groundwork of the metaphysic of morals* (H. J. Paton, Trans.). Harper & Row. (Original work published 1785)
- 12] Khasanova, D. K. (2024). The principles of deontological ethics. *Academicia Globe: Inderscience Research*, 2(5), 56-59.
- 13] Körner, A., & Deutsch, R. (2023). Deontology and Utilitarianism in Real Life: A Set of Moral Dilemmas Based on Historic Events. *Personality and Social Psychology Bulletin*, 49(10), 1511-1528.
- 14] Maier, M., Cheung, V., & Lieder, F. (2026). Moral decision-making with bounded cognitive resources and limited information. *Trends in Cognitive Sciences*, 30(5), 394–397. <https://doi.org/10.1016/j.tics.2025.12.010>
- 15] Mansouri, A. (2024). Kant's Moral Theory Meets Evolutionary Theory. *Journal of Philosophical Investigations*, 18(47), 251-264. <https://doi.org/10.22034/JPIUT.2024.62262.3799>
- 16] Marcus, A. A., & Hargrave, T. J. (2023). *Managing business ethics: Making ethical decisions*. SAGE Publications, Inc. <https://doi.org/10.4135/9781506388625>
- 17] McNaughton, D., & Rawling, P. (2026). Rossian deontology. In D. Copp, C. Rosati, & T. Rulli (Eds.), *The Oxford handbook of normative ethics*. Oxford University Press. <https://doi.org/10.1093/9780197510926.003.0016>
- 18] Meacham, C. J. G. (2022). Utilitarianism, altruism, and consent. *Journal of Ethics and Social Philosophy*, 21(1), 49-81. <https://doi.org/10.26556/jesp.v21i1.1437>
- 19] Mejia, S., & Skorburg, J. A. (2022). Malleable character: Organizational behavior meets virtue ethics and situationism. *Philosophical Studies*, 179(12), 3535-3563. <https://doi.org/10.1007/s11098-022-01844-3>
- 20] Morrell, K., & Dahlmann, F. (2023). Aristotle in the Anthropocene: The comparative benefits of Aristotelian virtue ethics over utilitarianism and deontology. *The Anthropocene Review*, 10(1), 221-241. <https://doi.org/10.1177/20530196221105093>
- 21] Opp, K.-D. (2024). The recent turn in analytical sociology: The dismissal of general theories, mental states, and analytic philosophy – and the old issue of mechanism explanations. *Social Science Information*, 63(2), 131-154. <https://doi.org/10.1177/05390184241247724>

- 22] Osmani, J., & Doda, S. (2025a). Top managers and overconfidence: Are there age-related differences? *Corporate Board: Role, Duties and Composition*, Vol. 21(3), 24-34. <https://doi.org/10.22495/cbv21i3art2>
- 23] Osmani, S., & Doda, S. (2025b). Gender diversity: Are women at the strategic level less risk-taking than men? *Risk Governance & Control: Financial Markets & Institutions*, Vol. 15(1), 226-236. <https://doi.org/10.22495/rgcv15i1sip8>
- 24] Osmani, J. (2017). *Vendimmarrja organizative*. Tiranë: Botimet Strehë
- 25] Rosenstand, N. (2024). *The moral of the story: An introduction to ethics* (10th international student ed.). McGraw-Hill Education.
- 26] Ross, W. D. (1930). *The right and the good*. Oxford University Press.
- 27] Schadow, S. (2022). Acting for a reason: What Kant's concept of maxims can tell us about value, human action, and practical identity. In C. Horn & R. Santos (Eds.), *Kant's theory of value* (pp. 65-88). De Gruyter. <https://doi.org/10.1515/9783110796056-006>
- 28] Sharmila Devi, R., & Perumandla, S. (2023). Does hedonism influence real estate investment decisions? The moderating role of financial self-efficacy. *Cogent Economics & Finance*, 11(1), 2217581. <https://doi.org/10.1080/23322039.2023.2217581>
- 29] Slote, M. (2023). *Philosophical Essays East and West: Agent-based virtue ethics and other topics at the intersection of Chinese thought and western analytic philosophy*. Routledge.
- 30] Sverdlik, S. (2024). Bentham's Project of Applied Ethics, c. 1780: A Penal Code. Part 1: Offences. *Journal of Bentham Studies*, 21(1). <https://doi.org/10.14324/111.4444.jbs.2024.05>
- 31] Thorpe, L. (2024). Immanuel Kant and deontology. In *Ethical theory in global perspective* (pp. 191-206). <https://doi.org/10.2307/jj.18255555.16>
- 32] Tohaneanu, C. (2015). Could Ross's pluralist deontology solve the conflicting duties problem? *Revue Roumaine de Philosophie*, 59(1), 109–124.
- 33] Triantari, S., & Vavouras, E. (2024). Decision-making in the modern manager-leader: Organizational ethics, business ethics, corporate social responsibility. *Cogito: Multidisciplinary Research Journal*, 16(1), 7-28.
- 34] Tugby, M. (2024). *Teleology*. Cambridge University Press.
- 35] Williams, E. G. (2023). Rule utilitarianism and rational acceptance. *The Journal of Ethics*, 27(3), 305-328. <https://doi.org/10.1007/s10892-023-09428-7>

- 36] Yuan, L., Chia, R., & Gosling, J. (2023). Confucian virtue ethics and ethical leadership in modern China. *Journal of Business Ethics*, 182(1), 119–133.
<https://doi.org/10.1007/s10551-021-04947-x>
- 37] Zagzebski, L. (2023). Virtue ethics. *Think*, 22(63), 15–21.
<https://doi.org/10.1017/S1477175622000252>

Non-Epileptic Seizures: A Practical Approach to Differential Diagnosis

Aida QUKA^{1,2}, Ilirjana Zekja^{1,2}, Jera Kruja²

Department of Neurology, UHC Mother Teresa, Tirana, Albania

Department of Neurosciences, University of Medicine, Faculty of Medicine, Tirana, Albania

Abstract

Non-epileptic seizures (NES) mimic epileptic seizures but occur without abnormal cortical electrical discharge. Psychogenic non-epileptic seizures (PNES) are the most common and clinically important subtype. Misdiagnosis is common and costly: patients are frequently treated for years with antiepileptic drugs before the correct diagnosis is reached, and up to half of PNES patients also have true epilepsy. This paper summarizes the semiological, electrophysiological, and clinical features that separate PNES from epileptic seizures, reviews the main mimics clinicians should keep in mind, and outlines the pitfalls that most often lead to error. Video-EEG monitoring remains the reference standard. No single sign is diagnostic on its own; the pattern across several features is what matters.

Keywords: non-epileptic seizures, PNES, differential diagnosis, video-EEG, seizure semiology

1. Introduction

Epileptic seizures arise from excessive, synchronized neuronal discharge and show characteristic changes on EEG (Ying, 2023). Non-epileptic seizures look similar at the bedside but lack that electrical signature (Ying, 2023; Carreño, 2008). Telling the two apart is one of the harder problems in clinical neurology, and getting it wrong has real consequences for patients (Brodtkorb, 2013; Ying, 2023). Among the several kinds of NES, PNES stands out: it is the most frequent, and its cause is psychological rather than neurological (Brodtkorb, 2013; Xiang et al., 2019).

Delayed or incorrect diagnosis exposes patients to needless drug side effects, drives up costs, and pushes back the psychological care they actually need (Certo et al., 2022; Gomes & Gomes, 2015). Diagnostic delays of years are not unusual (de Timary et al., 2002). To add to the difficulty, epilepsy and PNES coexist in the same patient in up to half of cases (Brigo, 2017).

2. Epidemiology

In epilepsy monitoring units, roughly 19% of patients referred for drug-resistant seizures turn out to have PNES, and only about a third of these also have epilepsy (Ja, 1985). PNES tends to begin later than epilepsy, around age 30 on average (Psychogenic non-epileptic seizures [PNES], 2023), and is more common in women (Xiang et al., 2019). Attacks are frequent — often two or more per week (Psychogenic non-epileptic seizures [PNES], 2023). Because up to 50% of PNES patients also carry a genuine epilepsy diagnosis (Brigo, 2017), and about 10% of patients with non-epileptic events have concurrent epilepsy (Sullo et al., 2021), clinicians cannot assume the two are mutually exclusive. PNES rates are highest in tertiary epilepsy centers, which reflects referral bias but also argues for a high index of suspicion whenever seizures resist treatment.

3. Classification

NES is not one condition. The main categories are:

- PNES — the largest group, driven by psychological mechanisms rather than cortical dysfunction (Brodtkorb, 2013; Brigo, 2017; Xiang et al., 2019).
- Physiological events — syncope, cardiac arrhythmia, metabolic disturbance, hyperventilation (Brodtkorb, 2013; Carreño, 2008; Noachtar & Güldiken, 2017).
- Movement disorders — paroxysmal dyskinesias and related episodic phenomena (Carreño, 2008; Noachtar & Güldiken, 2017).
- Sleep-related events — parasomnias, night terrors (Noachtar & Güldiken, 2017; Sullo et al., 2021).
- Cerebrovascular events — TIAs with positive motor features, especially in older adults (Carreño, 2008; Noachtar & Güldiken, 2017).
- Migraine variants — certain aura types can be mistaken for seizures (Carreño, 2008; Noachtar & Güldiken, 2017).
- Other — gastroesophageal reflux in infants (chewing/mouthing movements) and panic attacks, both of which have their own EEG signatures (Voitiuk et al., 2020).

4. Semiology: What to look for?

No single feature clinches the diagnosis, but several are strongly weighted toward PNES.

Duration and onset: PNES events usually run longer than epileptic seizures — often past two minutes, sometimes 10–15 minutes or more (Xiang et al., 2019; Widyadharma et al., 2021; Verrotti et al., 2012) — and build gradually (Verrotti et al.,

2012; Widyadharma et al., 2021; Chaturvedi & Goyal, 2018; Kinney & Craig, 2015). Epileptic seizures, by contrast, are typically brief, around 1–2 minutes (Toffa et al., 2020), and start abruptly (Kinney & Craig, 2015).

Motor features. Asynchronous, out-of-phase limb movement appears in roughly 96% of PNES versus 5% of generalized tonic-clonic seizures (Xiang et al., 2019; Avbersek & Sisodiya, 2010; Widyadharma et al., 2021). Pelvic thrusting and side-to-side head or body movement are both more common in PNES (Xiang et al., 2019; Avbersek & Sisodiya, 2010; Duncan et al., 2021; Liampas et al., 2021); head shaking carries an odds ratio near 3 for PNES (Duncan et al., 2021). The single most discriminating motor sign is a fluctuating, waxing-and-waning course — sensitivity around 76%, odds ratio near 37 (Duncan et al., 2021; Avbersek & Sisodiya, 2010; Toffa et al., 2020). Back arching, despite its reputation, has not held up well as a discriminator in careful studies (Chaturvedi & Goyal, 2018; Duncan et al., 2021).

Eyes: Eyes closed during the event, especially with resistance to passive opening, occurs in 34–87% of PNES versus 0–26% of epileptic seizures — one of the more useful bedside signs (Xiang et al., 2019; Avbersek & Sisodiya, 2010; Toffa et al., 2020; Widyadharma et al., 2021; Kinney & Craig, 2015; Liampas et al., 2021).

Vocalization: PNES events often include emotionally colored sounds — crying, moaning, intelligible speech, expressions of frustration (Xiang et al., 2019; Toffa et al., 2020; Widyadharma et al., 2021; Kinney & Craig, 2015; Liampas et al., 2021). Epileptic seizures are more likely to produce a primitive cry at onset (Xiang et al., 2019; Kinney & Craig, 2015).

Consciousness: Patients with PNES often retain some awareness through the event, recall it afterward, and show no postictal confusion (Verrotti et al., 2012; Chaturvedi & Goyal, 2018; Avbersek & Sisodiya, 2010; Liampas et al., 2021). Postictal confusion, by contrast, is present in roughly 85% of epileptic seizures and is one of the more reliable negatives for PNES (Toffa et al., 2020).

Other clues: Deep lateral tongue biting favors epilepsy; cyanosis occurs in epileptic seizures but not PNES (Kinney & Craig, 2015). Incontinence and superficial tongue biting can occur in either and are not useful alone (de Timary et al., 2002). Pre-ictal “pseudosleep” — the patient appears asleep but the EEG shows wakefulness — points to PNES (Xiang et al., 2019; Avbersek & Sisodiya, 2010; Widyadharma et al., 2021; Liampas et al., 2021). Variable, inconsistent withdrawal from a painful stimulus also favors PNES; a true epileptic seizure typically shows none (Kinney & Craig, 2015).

The takeaway for practice: build a picture from several of these features together. Any one sign, taken alone, is unreliable (Brigo, 2017).

5. Diagnostic Tools

Clinical history: Still the single most useful tool (Brodtkorb, 2013; Leibetseder et al., 2020). Get it from the patient and from a witness — accounts from either source alone are often incomplete (Leibetseder et al., 2020). Ask about attack frequency (Psychogenic non-epileptic seizures [PNES], 2023), age of onset, response to at least two antiepileptic drugs (Psychogenic non-epileptic seizures [PNES], 2023; Gomes & Gomes, 2015; Certo et al., 2022), recent psychosocial stress (Brodtkorb, 2013), and any prior psychiatric history. A home video from a family member can be worth more than a page of description (Leibetseder et al., 2020; Noachtar & Güldiken, 2017).

Interictal EEG: Limited value on its own (Noachtar & Güldiken, 2017). Only 16% of pure NES patients show interictal epileptiform abnormalities, versus 80% of patients who have both NES and epilepsy (de Timary et al., 2002) — but a normal interictal EEG never rules out epilepsy, since many epilepsy patients have normal EEGs between seizures. At least two normal EEG studies during typical events support a PNES diagnosis (Psychogenic non-epileptic seizures [PNES], 2023), and high sensitivity for epilepsy requires repeated recordings (Noachtar & Güldiken, 2017).

Ictal EEG: More useful. A normal EEG during a typical event, paired with loss of responsiveness, is close to diagnostic for PNES (Chaturvedi & Goyal, 2018). Epileptic seizures show epileptiform discharge during the event (Ying, 2023; Toffa et al., 2020); PNES does not (Widyadharma et al., 2021; Verrotti et al., 2012).

Video-EEG monitoring: The gold standard (Brigo, 2017; Plattes, 2023). It links the clinical event directly to the electrical record and can catch pre-ictal pseudosleep, wakefulness during an apparently unresponsive episode, and the absence of postictal EEG change after an apparent convulsion (Xiang et al., 2019; Liampas et al., 2021; Certo et al., 2022). It is also the only reliable way to separate the two event types in patients who have both (Devinsky et al., 1996), and provocation with suggestion can add further diagnostic value (Widyadharma et al., 2021; Toffa et al., 2020).

Neuroimaging: Useful for ruling out structural lesions (Leibetseder et al., 2020) but not for distinguishing PNES from epilepsy directly — patients with both conditions often have imaging indistinguishable from epilepsy alone (Devinsky et al., 1996).

Biomarkers. Serum prolactin rises after epileptic seizures but stays flat after PNES (Toffa et al., 2020; Chaturvedi & Goyal, 2018), though timing (10–20 minutes post-event) is critical and false negatives occur, particularly with focal seizures. A heart-rate rise over 30% from baseline has been reported with 97% positive predictive value for epileptic seizures (Liampas et al., 2021), though it requires continuous monitoring to catch.

Psychiatric evaluation: PNES patients often carry dissociative features — unexplained sensory loss, for instance — and identifiable psychosocial triggers (Certo et al., 2022; Brodtkorb, 2013). A careful psychiatric history also helps rule out other mimics, such

as catatonia (Plattes, 2023), and PNES patients tend to show psychiatric-interview findings distinct from those of patients with epilepsy alone (Devinsky et al., 1996).

6. Common Mimics

Beyond PNES, several conditions regularly get mistaken for epileptic seizures:

- Syncope — convulsive movements lack the tonic-clonic sequence, postictal symptoms are minimal (Brodtkorb, 2013), and EEG shows bilateral synchronous theta (Voitiuk et al., 2020; Leibetseder et al., 2020; Carreño, 2008).
- Paroxysmal movement disorders — specific triggers (movement, startle), preserved consciousness, normal EEG (Carreño, 2008; Noachtar & Güldiken, 2017).
- TIA — negative symptoms more than positive ones, vascular risk factors, older patients (Carreño, 2008; Noachtar & Güldiken, 2017).
- Migraine variants — visual aura with a characteristic march, longer duration, family history (Carreño, 2008; Noachtar & Güldiken, 2017).
- Parasomnias — occur only from sleep, age-related, often familial (Noachtar & Güldiken, 2017; Sullo et al., 2021).
- Hyperventilation — carpopedal spasm, perioral numbness, reproducible by voluntary hyperventilation (Brodtkorb, 2013).
- Panic attacks — prominent anxiety and autonomic symptoms, a distinct EEG pattern of right-sided alpha decrease and beta1 increase (Voitiuk et al., 2020).
- Metabolic derangement — hypoglycemia, hypocalcemia, hyponatremia; resolves with correction (Carreño, 2008).
- GER in infants — chewing/mouthing movements tied to feeding, confirmed by pH probe and EEG (Voitiuk et al., 2020).
- Cardiac arrhythmia — palpitations, chest pain, abnormal ECG or event recorder (Noachtar & Güldiken, 2017).

7. Pitfalls

A short list of ways this diagnosis goes wrong in practice:

- 1) Leaning on one clinical sign instead of the whole pattern (Brigo, 2017).
- 2) Treating tongue biting, falling, or incontinence as proof of epilepsy — both occur in PNES too (de Timary et al., 2002).
- 3) Assuming a normal interictal EEG rules out epilepsy (Noachtar & Güldiken, 2017; de Timary et al., 2002).

- 4) Missing coexistent epilepsy and PNES in the same patient (Brigo, 2017; Devinsky et al., 1996).
- 5) Taking a thin history from patient or witness (Leibetseder et al., 2020).
- 6) Closing the diagnostic question too early once epilepsy “seems likely.”
- 7) Reading a normal scalp EEG as proof of PNES — some focal and temporal seizures don't show up on scalp electrodes.
- 8) Overlooking mimics other than PNES — syncope, TIA, metabolic causes (Carreño, 2008; Noachtar & Güldiken, 2017).
- 9) Letting diagnosis drag on for years despite a poor response to treatment (de Timary et al., 2002).
- 10) Assuming stereotypy favors one diagnosis over the other — both PNES and epilepsy can be stereotyped in a given patient (Devinsky et al., 1996).

8. Management Implications

The two conditions call for different treatment entirely. Epilepsy needs antiepileptic drugs; PNES needs psychological or psychiatric care, and giving anticonvulsants for PNES can make things worse rather than better (Gomes & Gomes, 2015; Certo et al., 2022). Patients with both need both (Gomes & Gomes, 2015). Getting the diagnosis right sooner means fewer wasted drug trials, fewer ED visits, and lower cost (Gomes & Gomes, 2015) — and since PNES patients tend to have worse quality of life and more mood symptoms than epilepsy patients, largely from depression and medication side effects (Szaflarski et al., 2003), real gains for the patient follow from getting there faster. How the diagnosis is delivered matters too: framing PNES as a real, identified, treatable condition, not simply “not epilepsy,” helps patients engage with treatment rather than feel dismissed. Long-term care is best handled by a team — neurology, psychiatry, psychology — working together.

9. Conclusion

Separating epileptic from non-epileptic seizures takes more than a single test or sign. History from patient and witness, careful attention to semiology, judicious use of EEG, and video-EEG confirmation when the picture is unclear — together, these get the diagnosis right. Duration, onset, motor pattern, eye signs, vocalization, and postictal state each carry weight, but none alone is decisive (Brigo, 2017). Given how much the wrong diagnosis costs a patient — in drug exposure, in delayed psychiatric care, in years lost to the wrong treatment — that combined approach is worth the extra effort it takes.

References

- 1] Avbersek, A., & Sisodiya, S. M. (2010). Does the primary literature provide support for clinical signs used to distinguish psychogenic nonepileptic seizures from epileptic seizures? *Journal of Neurology, Neurosurgery, and Psychiatry*, 81(7), 719–725. <https://doi.org/10.1136/jnnp.2009.197996>
- 2] Brigo, F. (2017). Psychogenic non-epileptic seizures: An overview on terminology, epidemiology and diagnostic features. *Clinical and Translational Neuroscience*, 2, 7. <https://doi.org/10.11138/ccre/2017.2.1.007>
- 3] Brodtkorb, E. (2013). Common imitators of epilepsy. *Acta Neurologica Scandinavica*, 127(196), 5–10. <https://doi.org/10.1111/ane.12043>
- 4] Carreño, M. (2008). Recognition of nonepileptic events. *Seminars in Neurology*, 28(3), 297–304. <https://doi.org/10.1055/s-2008-1079334>
- 5] Certo, A., Rodrigues, J. D., Nombora, O., Basto, M. I. V. Z. D. M., & Mendes, E. (2022). Dissociative and epileptic seizures: How to distinguish them? *European Psychiatry*, 65(S1), S481. <https://doi.org/10.1192/j.eurpsy.2022.1222>
- 6] Chaturvedi, S., & Goyal, G. (2018). Spectrum of conversion disorders: Clinical perspective for a neurologist. 3(1), 7–16. <https://doi.org/10.5005/jp-journals-10057-0068>
- 7] de Timary, P., Fouchet, P., Sylin, M., Indriets, J.-P., de Barsy, T., Lefebvre, A., & Denef, J.-F. (2002). Non-epileptic seizures: Delayed diagnosis in patients presenting with electroencephalographic (EEG) or clinical signs of epileptic seizures. *Seizure*, 11(3), 193–197. <https://doi.org/10.1053/seiz.2001.0617>
- 8] Devinsky, O., Sanchez-Villasenor, F., Vazquez, B., Kothari, M. J., Alper, K., & Luciano, D. J. (1996). Clinical profile of patients with epileptic and nonepileptic seizures. *Neurology*, 46(6), 1530–1533. <https://doi.org/10.1212/wnl.46.6.1530>
- 9] Duncan, A. J., Peric, I., Boston, R. C., & Seneviratne, U. (2021). Predictive semiology of psychogenic non-epileptic seizures in an epilepsy monitoring unit. *Journal of Neurology*, 1–7. <https://doi.org/10.1007/s00415-021-10805-1>
- 10] Gomes, L. M. K., & Gomes, R. de F. (2015). Crises epilépticas x crises não epilépticas psicogênicas: Diagnóstico diferencial. 12(1).
- 11] Ja, W. (1985). Differential diagnosis of epilepsy. 37, 285–311.

- 12] Kinney, M. J., & Craig, J. (2015). Grand rounds: An update on convulsive status epilepticus. *Ulster Medical Journal*, 84(2), 88–93.
- 13] Leibetseder, A., Eisermann, M., LaFrance, W. C., Nobili, L., & von Oertzen, T. J. (2020). How to distinguish seizures from non-epileptic manifestations. *Epileptic Disorders*, 22(6), 716–738.
<https://doi.org/10.1684/epd.2020.1234>
- 14] Liampas, A., Markoula, S., Zis, P., & Reuber, M. (2021). Psychogenic non-epileptic seizures (PNES) in the context of concurrent epilepsy – Making the right diagnosis. 3(1), 1–11. <https://doi.org/10.1186/s42494-021-00057-x>
- 15] Noachtar, S., & Güldiken, B. (2017). Diagnose nichtepileptischer paroxysmaler Störungen und epileptischer Anfälle. *Der Nervenarzt*, 88(10), 1109–1118. <https://doi.org/10.1007/s00115-017-0397-9>
- 16] Plattes, M. M. (2023). A case report of psychogenic non-epileptic seizures in a 29-year-old male with schizophrenia. *Cureus*, 15.
<https://doi.org/10.7759/cureus.37078>
- 17] Psychogenic non-epileptic seizures (PNES). (2023).
<https://doi.org/10.5772/intechopen.108418>
- 18] Sullo, F., et al. (2021). Non-epileptic paroxysmal events: Clinical features and diagnostic differences with epileptic seizures. A single tertiary centre study. *Clinical Neurology and Neurosurgery*.
<https://doi.org/10.1016/j.clineuro.2021.106739>
- 19] Szaflarski, J. P., et al. (2003). Quality of life in psychogenic nonepileptic seizures. *Epilepsia*, 44(2), 236–242. <https://doi.org/10.1046/j.1528-1157.2003.35302.x>
- 20] Toffa, D. H., Poirier, L., & Nguyen, D. K. (2020). The first-line management of psychogenic non-epileptic seizures (PNES) in adults in the emergency: A practical approach. 2(1), 1–11. <https://doi.org/10.1186/s42494-020-00016-y>
- 21] Verrotti, A., Pavone, P., Agostinelli, S., Nanni, G., & Gobbi, G. (2012). Psychogenic non-epileptic seizures: A diagnostic problem difficult to solve in clinical practice.
- 22] Voitiuk, A., Litovchenko, T., & Markova, D. (2020). Non-epileptic paroxysmal states in epilepsy. *Journal of Neurology and Neuroscience*, 11(5).
- 23] Widyadharma, I. P. E., Soejitno, A., Samatra, D. P. G. P., & Sinardja, A. M. G. (2021). Clinical differentiation of psychogenic non-epileptic seizure: A practical diagnostic approach. *The Egyptian Journal of Neurology, Psychiatry*

and Neurosurgery, 57(1), 1–9. <https://doi.org/10.1186/s41983-021-00272-w>

- 24] Xiang, X., Fang, J., & Guo, Y. (2019). Differential diagnosis between epileptic seizures and psychogenic nonepileptic seizures based on semiology. 1(1), 1–5. <https://doi.org/10.1186/s42494-019-0008-4>
- 25] Ying, L. X. (2023). Progress on distinguishing in epileptic and non-epileptic seizure. <https://doi.org/10.3969/j.issn.1672-673>

The Role of Social Workers in Supporting Children Facing Social and Family Difficulties: Promoting Resilience, Protection, and Social Inclusion

Alisa Biçoku

Department of Social Sciences, Faculty of Education, Aleksandër Xhuvani University, Elbasan,
Albania

Abstract

Children experiencing social and family difficulties poverty, family conflict, separation, neglect, domestic violence, social exclusion, migration, or limited access to services face risks to their emotional wellbeing, development, education, and sense of security. Social workers occupy a central position in identifying needs, assessing risk, coordinating services, strengthening family capacity, and protecting children's rights. This paper examines the multidimensional role of social workers supporting children facing complex social and family difficulties, focusing on child-centred practice, family support, early intervention, resilience, multidisciplinary collaboration, and social inclusion. Drawing on social work and child-welfare scholarship, it explores how practitioners work at the intersection of the child, family, school, community, and welfare institutions, and considers structural barriers such as insufficient resources, fragmented services, heavy caseloads, and limited inter-agency coordination. The paper argues that effective support requires an integrated approach combining individual intervention with family-centred practice and institutional response, and that children's participation and protective factors deserve as much attention as risk and deficit. It concludes that social workers can substantially improve children's wellbeing and inclusion when practice is supported by adequately resourced, rights-based, and well-coordinated child-protection systems.

Keywords: *Social work; Children; Family difficulties; Social vulnerability; Child protection; Resilience; Social inclusion; Family support*

1. Introduction

Children's wellbeing is shaped not only by individual characteristics but by the family, social, educational, economic, and institutional environments in which they develop. Poverty, family conflict, separation, neglect, violence, unemployment, migration, and

inadequate access to services can produce overlapping and cumulative forms of vulnerability, showing up as emotional distress, behavioural difficulties, reduced educational participation, social isolation, or disrupted relationships with caregivers. These outcomes are rarely explained by the child alone; they emerge from interactions among individual needs, family relationships, socioeconomic conditions, community resources, and institutional responses.

Social work is well placed to address this complexity because it approaches children's difficulties within their broader social environment. Social workers act as assessors, advocates, case managers, family-support practitioners, and service coordinators, with responsibilities that extend beyond crisis response to prevention, early identification, and the promotion of children's participation and inclusion. A child-centred perspective further requires recognising children as rights-holders with views and competencies that assessment must take seriously, while family-centred practice recognises that protecting children often means strengthening, not replacing, family relationships.

This paper examines how social workers support children facing social and family difficulties, focusing on the relationships among child-centred intervention, family support, resilience, multidisciplinary collaboration, child protection, and social inclusion, and on the institutional conditions that enable or constrain effective practice. It addresses four research questions: (RQ1) What are social workers' principal roles and responsibilities with children facing social and family difficulties? (RQ2) How do child- and family-centred interventions contribute to resilience, wellbeing, and inclusion? (RQ3) What role does multidisciplinary collaboration play? (RQ4) What institutional and structural barriers constrain effective intervention?

2. Literature Review

2.1 Children Experiencing Social and Family Difficulties

Children's development is closely tied to the stability of their environments. While the family is generally a source of protection and identity, it can also become a source of vulnerability when relationships are affected by conflict, poverty, violence, neglect, separation, migration, or limited access to services. These difficulties rarely operate independently; a child experiencing economic deprivation may simultaneously face inadequate housing, parental stress, and reduced opportunities for participation. Contemporary child-welfare scholarship therefore treats vulnerability as multidimensional, and assessment as requiring attention to protective factors — supportive relationships, positive school experiences, extended family, and community resources — as much as to risk.

2.2 The Social Worker as Coordinating Professional

Social workers connect individual wellbeing with family circumstances and wider social conditions, through psychosocial assessment, risk and protective-factor evaluation, service coordination, parental support, advocacy, and monitoring. This role extends beyond administrative case management: the social worker is often the professional link between the child and multiple systems — family, school, health, psychological services, child protection, local government, and community organisations. Continuity is essential where families interact with several institutions simultaneously; without effective coordination, families may face fragmented, repetitive, or inaccessible support.

2.3 Child-Centred Practice

Child-centred practice requires professionals to consider children's experiences, developmental capacities, rights, and perspectives throughout assessment and intervention, without separating children from their family context. Children are social actors whose accounts of family conflict, poverty, separation, or professional intervention may differ from adult interpretations, and whose participation — adapted to age and maturity — can improve both the quality of assessment and children's trust in the process.

2.4 Family-Centred Practice and Parental Capacity

Family-centred practice recognises that many parents facing difficulty need support rather than blame. Economic insecurity, unemployment, housing instability, and social isolation can weaken caregiving capacity even where parents remain deeply committed to their children. Social workers must therefore distinguish deliberate harm from capacity weakened by external pressure, offering practical assistance — financial, housing, healthcare, or parenting support — alongside a strengths-based orientation that builds on existing family competencies and informal networks rather than defining families solely by their problems.

2.5 Early Intervention and Prevention

Contemporary child and family social work increasingly emphasises prevention over crisis response. Early intervention seeks to identify difficulties — school absence, behavioural change, financial crisis, deteriorating housing, parental stress — before they escalate, requiring social workers to connect signals across schools, health services, and welfare agencies. Effective prevention depends on accessible community services and appropriate information-sharing, and can reduce the likelihood of unnecessary family separation.

2.6 Resilience and Social Inclusion

Resilience is increasingly understood relationally rather than as a fixed individual trait: it emerges through interactions between a child's characteristics and supportive relationships, family resources, schools, and institutions. Social workers can build

resilience by strengthening supportive relationships and facilitating participation in education and community life. Social inclusion, in turn, requires more than protection from harm; it requires meaningful access to education, friendships, recreation, and community participation, with schools serving as both sites where difficulties become visible and major sources of protection.

2.7 Multidisciplinary Collaboration and Structural Constraints

Children with complex needs typically require support across professional systems — teachers, psychologists, health professionals, child-protection specialists, and community organisations. Multidisciplinary involvement improves the depth of understanding of a child's circumstances, but does not by itself produce coordinated care: unclear referral pathways and limited communication can fragment rather than strengthen support. Effectiveness also depends on the institutional environment: heavy caseloads, unavailable specialist services, inadequate supervision, and geographical inequality can undermine even highly competent practice, meaning that structural investment in the surrounding system is as important as individual practitioner skill.

3. Theoretical Framework

Understanding social workers' role requires a framework that explains both individual experience and the environments in which childhood vulnerability develops. This paper draws on four complementary perspectives.

Ecological Systems Theory (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006) conceptualises children's development as occurring within nested, interconnected systems — immediate relationships with family and peers, connections between family and school, wider institutional environments such as employment and welfare systems, and broader cultural and policy contexts. This shifts professional attention from what is "wrong" with a child or family toward how systems interact to create risk or protection, and supports assessment that considers the child, the family, the school, community resources, and institutional and socioeconomic barriers together.

Resilience Theory (Masten, 2018) treats resilience as a relational process rather than a fixed personal trait: a child's capacity to adapt to adversity depends substantially on relationships, opportunities, and resources available in the surrounding environment. This reframes the professional task from teaching children to tolerate adversity toward strengthening the protective environments and relationships that make positive adaptation possible.

The Strengths-Based Perspective (Saleebey, 2013) complements resilience theory by challenging deficit-focused assessment. Without minimising serious risk, it asks what families already do effectively, which relationships are supportive, and how families have managed previous difficulty — shifting the professional relationship toward

collaboration rather than a purely expert-prescriptive model, and helping to prevent children being reduced to stigmatising labels such as "at risk".

A Rights-Based and Child-Centred Approach, grounded in the UN Convention on the Rights of the Child (United Nations, 1989), establishes principles of non-discrimination, the best interests of the child, survival and development, and participation. These principles require that decisions give primary consideration to children's safety and development, that unequal access to services be identified and addressed, and that children's views be given due weight according to age and maturity — without transferring safeguarding responsibility to children themselves.

Combined, these perspectives support an integrated model in which assessment and intervention operate across four interacting levels — child, family, community and services, and structural and policy environment — and in which protection and participation, and risk and strengths, are treated as complementary rather than competing considerations.

4. Methodology

This study adopts a qualitative, literature-based design combining a structured review of academic literature on child and family social work with documentary analysis of international child-rights and child-welfare frameworks, including the UN Convention on the Rights of the Child and relevant UNICEF and WHO guidance. This design suits research questions concerned with professional roles, intervention principles, and structural conditions rather than a single measurable outcome.

Sources were included where they addressed social work practice with vulnerable children and families, child protection and safeguarding, family-centred or strengths-based intervention, resilience and protective factors, children's participation and rights, multidisciplinary collaboration, prevention, social inclusion, or organisational and structural conditions affecting practice. Sources focused exclusively on clinical treatment unconnected to family systems or social inclusion, and studies of adult populations unrelated to family or child welfare, were excluded. Priority was given to contemporary peer-reviewed literature, with foundational theoretical works retained where they underpin current practice.

Selected material was examined through qualitative thematic analysis. Concepts relevant to the four research questions were identified and organised into analytical categories — assessment, protection, participation, family support, resilience, prevention, inclusion, multidisciplinary coordination, and structural constraints — before being interpreted through the integrated theoretical framework in Section 3, and analysed across four interacting levels: the child, the family, community and services, and the institutional and structural environment.

Because the study relies on published literature and publicly available documents rather than primary data collection involving children or families, it does not raise the ethical risks associated with primary empirical research; nonetheless, care was taken to avoid deficit-based framing of children and families and to distinguish material disadvantage from parental inadequacy. Limitations of this design — the absence of primary evidence, cross-national variation in welfare systems, and the breadth of the category "social and family difficulties" — are addressed further in Section 8.

5. Findings

Thematic analysis identified six interconnected dimensions of social work practice.

5.1 Comprehensive Assessment and Early Identification

Children's difficulties commonly span several domains at once — education, economic hardship, family relationships, housing, and emotional wellbeing — and should not be treated as isolated problems. Assessment needs to be dynamic rather than a single snapshot, since family circumstances can deteriorate or improve, and early identification allows professionals to mobilise resources before difficulties escalate into crisis.

5.2 Child Protection, Voice, and Participation

Protection remains essential where children face abuse, neglect, exploitation, or violence, but child-centred practice requires more than deciding for children. Children's accounts of family relationships and professional intervention can differ from adult reports and can strengthen, rather than compete with, safeguarding. Participation must be developmentally appropriate, and clear communication about professional decisions helps maintain trust even where outcomes cannot fully reflect a child's preference.

5.3 Strengthening Families Rather Than Responding Only to Crisis

Many difficulties affecting children are connected to pressures on the family rather than parental failure. Where children can safely remain at home, connecting families to financial, housing, health, and parenting support, alongside identifying existing strengths, can reduce risk while building capacity that outlasts intensive professional involvement.

5.4 Building Resilience and Promoting Social Inclusion

Stable relationships with supportive adults — parents, relatives, teachers, or social workers — are particularly important to children's resilience. Preventing harm does not by itself produce inclusion: a child can be safe while remaining socially isolated or educationally disadvantaged, so intervention should also support participation in ordinary social environments, with schools an especially important site for both identifying difficulty and building belonging.

5.5 Multidisciplinary Collaboration and Case Coordination

Multiple professionals can produce a more complete picture of a child's circumstances, but multiple involvement is not the same as coordination; unclear responsibilities can leave families repeating information or falling through gaps between services. Social workers frequently perform a case-coordination function — establishing responsibilities, facilitating referrals, and monitoring whether families actually access the services to which they are referred, since referral alone does not resolve a need.

5.6 Structural and Organisational Constraints

Effectiveness cannot be explained by practitioner competence alone. High caseloads reduce time for relationship-based practice; unavailable specialist services limit the practical value of otherwise accurate assessment; and geographical and funding inequalities compound these effects. Professional supervision and continuing development are institutional requirements for sustaining sound judgement and reducing burnout, not optional extras.

Across these themes, the social worker functions as a bridge — between the child and family, the family and formal services, the school and support structures, and individual need and institutional response. The more fragmented the surrounding service system, the greater the coordination burden placed on the individual practitioner, which is why strengthening social work requires investment in both practitioner competence and the systems practitioners are expected to connect.

6. Discussion

The findings support an ecological interpretation of children's difficulties: behaviours such as school absenteeism or withdrawal may originate in family instability, poverty, or unmet emotional needs, so single-cause explanations risk misdirecting intervention. They also support a shift from a predominantly crisis-oriented model toward prevention, since intervention that occurs only after escalation forecloses opportunities to avoid more intrusive and costly responses later.

Protection and participation emerge as complementary rather than competing principles: listening to children can improve safeguarding by surfacing information not otherwise visible to adults, while explaining decisions to children — even when outcomes cannot match their preferences — preserves trust. Family support, similarly, functions as a child-welfare strategy in its own right where poverty-related hardship, rather than abuse or neglect, is the underlying difficulty; treating disadvantage as parental failure both misdiagnoses the problem and risks stigmatising families who retain strong, committed relationships with their children.

Because resilience depends on relationships and environments as much as on individual characteristics, professional effort is better directed at strengthening

protective conditions than at expecting children to cope unaided with adversity. Multidisciplinary involvement, meanwhile, adds value only where it is coordinated: parallel, uncoordinated professional activity can itself become a source of confusion and delay for families. Finally, professional competence has structural limits — a correctly identified need that cannot be met because no service exists, or because caseloads leave no time for relationship-based work, is a system failure rather than a practice failure, and should be understood and addressed as such.

7. Policy and Practice Recommendations

Building on these findings, the following recommendations are proposed:

Strengthen early identification and preventive social work, so that support is available before difficulties escalate into child-protection concerns, without stigmatising families whose primary difficulty is material or social disadvantage.

Make child-centred assessment and participation systematic rather than optional, with appropriate training in age-adapted communication and documentation that records children's own perspectives.

Recognise family support as a form of child protection, with access to financial, housing, employment, and parenting support where children can safely remain at home.

Develop integrated case management with clear referral pathways, defined responsibilities, and systematic follow-up, so that referral is treated as the beginning rather than the end of a service connection.

Strengthen school–social work collaboration, given schools' role in both identifying difficulty and supporting inclusion.

Invest in the workforce, through manageable caseloads, continuing professional development, and reflective supervision.

Expand accessible community-based services, particularly in rural and under-served areas, and address the structural determinants of vulnerability — poverty, housing insecurity, and unequal service access — alongside individual casework.

8. Limitations and Future Research

This literature-based study does not provide primary evidence from children, families, or practising social workers; qualitative interviews and, where ethically appropriate, participatory research with children could extend these findings. Child-welfare systems vary substantially across national and local contexts, so conclusions from one system should not be generalised uncritically to another. The category "social and family difficulties" is broad and heterogeneous, and future research would benefit from longitudinal designs examining whether improvements in resilience,

family functioning, and inclusion are sustained over time, as well as closer attention to the relationship between caseloads, supervision, and outcomes.

9. Conclusion

Children facing social and family difficulties experience interconnected challenges spanning family relationships, economic hardship, education, and social participation, and effective responses require social work that connects these dimensions rather than treating them separately. Social workers assess needs, identify risk and protective factors, support families, advocate for access to services, coordinate multidisciplinary intervention, and promote children's participation — but the effectiveness of this role depends on functioning service systems, manageable workloads, and reliable coordination, not on practitioner competence alone. Resilience should be understood as relational rather than purely individual, and social inclusion as requiring more than protection from immediate harm. Effective child and family social work therefore combines protection with participation, risk assessment with strengths-based practice, and individual casework with structural awareness — recognising that sustainable outcomes for children depend on shared responsibility across families, schools, communities, welfare institutions, and policymakers.

References

- 1] Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- 2] Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed., pp. 793–828). John Wiley & Sons.
- 3] Kennan, D., Brady, B., & Forkan, C. (2018). Supporting children's participation in decision making: A systematic literature review exploring the effectiveness of participatory processes. *The British Journal of Social Work*, 48(7), 1985–2002.
- 4] Masten, A. S. (2018). Resilience theory and research on children and families: Past, present, and promise. *Journal of Family Theory & Review*, 10(1), 12–31.
- 5] McCafferty, P., & Mercado García, E. (2023). Children's participation in child welfare: A systematic review of systematic reviews. *The British Journal of Social Work*, 54(3), 1092–1111.
- 6] Saleebey, D. (Ed.). (2013). *The strengths perspective in social work practice* (6th ed.). Pearson.
- 7] United Nations. (1989). *Convention on the Rights of the Child*. United Nations.

- 8] United Nations Children's Fund. (2019). Guidelines to strengthen the social service workforce for child protection. UNICEF.
- 9] World Health Organisation. (2016). INSPIRE: Seven strategies for ending violence against children. World Health Organisation.
- 10] World Health Organisation. (2018). INSPIRE handbook: Action for implementing the seven strategies for ending violence against children. World Health Organisation.
- 11] World Health Organisation. (2023). WHO guidelines on parenting interventions to prevent maltreatment and enhance parent-child relationships with children aged 0–17 years. World Health Organisation.

Challenges in the Diagnosis and Treatment of Epilepsy in Elderly Patients

Aida QUKA, Ilirjana ZEKJA, Jera KRUJA

Department of Neurosciences, UHC Mother Teresa Tirana, Albania

Abstract

Diagnosing and treating epilepsy stays difficult even though its incidence peaks after age 65. Older adults often have seizures that look nothing like the textbook picture, so recognition lags — and rather than genetic or idiopathic origins, it's cerebrovascular disease and neurodegeneration that account for most cases. Treatment gets harder still because of altered pharmacokinetics, comorbidity, polypharmacy, and a heightened sensitivity to side effects. Levetiracetam and lamotrigine have emerged as the go-to first-line agents thanks to their tolerability and low interaction potential, even though older patients are still underrepresented in the trials backing that choice. Non-pharmacological approaches — epilepsy surgery, neuromodulation — look promising too, but only with careful patient selection. This review pulls together current evidence on epidemiology, pathophysiology, diagnosis, and management of epilepsy in older adults, and lays out where research and practice should go from here.

Keywords: challenges, diagnosis, treatment, epilepsy, elderly patients

1. Introduction

As populations age worldwide, epilepsy in older adults has turned into a pressing neurological concern. It's already the third most common neurological disorder in this age group, trailing only stroke and dementia [1], and projections put a sharp rise in prevalence by 2030 [16].

Treating epilepsy in older patients isn't just a variation on treating it in younger adults — it's fundamentally different. Age-related shifts in drug metabolism, layered on top of high comorbidity and polypharmacy rates, complicate treatment considerably [3,12]. Seizure presentation departs from the classical picture too, often delaying diagnosis or leading to misdiagnosis [5,13], while a heightened sensitivity to adverse drug effects and narrow therapeutic windows means dosing has to be individualized [6,7].

Even as geriatric epilepsy gains recognition as its own clinical entity, the evidence base stays thin: most antiepileptic drugs were never tested in older populations, who continue to be systematically excluded from clinical trials [9,25]. This review pulls together what's currently known about epidemiology, pathophysiology, diagnosis, and treatment in older adults, and flags priorities for research and practice going forward.

2. Definition of Epilepsy in Elderly Patients

2.1 ILAE Definition and Classification

By the ILAE definition, epilepsy is a brain disorder marked by an enduring predisposition to seizures — at least two unprovoked seizures more than 24 hours apart, or a single seizure carrying a recurrence risk comparable to that after two [13]. That definition holds at any age, but in older adults, telling true seizures apart from other paroxysmal events is a harder task.

The ILAE classification splits seizures by onset (focal versus generalized) and level of awareness, and in older patients, focal seizures with impaired awareness are the predominant type [13]. Etiology gets categorized similarly — structural, genetic, infectious, metabolic, immune, or unknown — and in this age group, structural causes, chiefly cerebrovascular disease and neurodegeneration, account for most cases and drive the diagnostic and treatment approach [1,17].

2.2 Age Threshold Debates

Epilepsy research has no single agreed-upon age cutoff for “elderly.” Sixty-five is the most common threshold, in line with conventional definitions of older adulthood [1,13], though some studies set it at 60 or 70 [23,29]. That inconsistency muddies prevalence estimates and makes trials harder to compare. Chronological age is also a poor proxy for physiological reality, since frailty and functional status vary enormously at any given age [8]; some authors have proposed frailty indices or functional age as a better alternative to a fixed cutoff [4,22].

2.3 Late-Onset Epilepsy

Late-onset epilepsy — a first seizure that occurs in older adulthood — is etiologically and prognostically distinct from epilepsy that started earlier in life and simply continued [11,23]. Cerebrovascular disease explains 15–40% of these cases, but even after thorough evaluation, roughly half stay of unknown cause [13,17].

The presentation is often subtle enough to be mistaken for a transient ischemic attack, syncope, or dementia-related cognitive fluctuation [7,23]. Because the events themselves are frequently unwitnessed, brief, and nonspecific, diagnosis is commonly delayed or missed altogether [11,17] — which matters because late-onset epilepsy typically calls for lifelong treatment once identified [11].

2.4 Differences from Younger Populations

In older patients, focal seizures tend to come with less prominent auras and automatisms, but postictal confusion runs longer and more severe, sometimes stretching days to weeks [5,13]. The seizures themselves, meanwhile, are often shorter in duration — one reason they go underrecognized [40]. Status epilepticus, too, shows up more often in this group and carries a higher mortality [5,9].

Etiologically, epilepsy that begins later in life is overwhelmingly symptomatic rather than idiopathic or genetic [13,17]; cerebrovascular disease leads the list of causes, followed by neurodegeneration, tumors, and traumatic brain injury [1,16]. Underlying all this are age-related shifts in neuronal networks, neurotransmitter systems, and blood-brain barrier integrity, which shape how seizures start and spread [9,15].

Treatment outcomes present a mixed picture. Drug-resistant epilepsy is comparatively rare, and low-dose monotherapy often controls seizures well [5,27] — but sensitivity to adverse effects runs much higher, the therapeutic window is narrower, and the downstream consequences can be serious: falls, cognitive impairment, fractures [1,6,7,14].

3. Epidemiology and Incidence in the Elderly

Epilepsy follows a bimodal age curve, peaking in early childhood and rising again later in life. After 65, incidence climbs steadily, eventually matching or surpassing rates seen in infancy [17,24]. In this older group, new-onset seizure incidence runs around 136 per 100,000 person-years and tops 150 past age 80 [24]; more recent figures put the 75–89 age-specific rate at 101.1 per 100,000, compared with just 10.6 in the 45–59 bracket [7].

Prevalence has been trending upward for decades — incidence climbed 24% between 2010 and 2015 alone, with the sharpest rise among those over 60 [7]. In Japan, where 27.3% of the population had passed 65 by 2017, epilepsy incidence after age 75 now rivals or exceeds that seen in one-year-olds [17]. Past age 70, prevalence roughly doubles what's seen in children, and about 30% of new epilepsy diagnoses now occur in older adults [29]; by 2020, half of all new-onset seizures were projected to occur in patients 60 or older [25]. Global burden-of-disease analyses back this up, showing rising prevalence and disability-adjusted life years tied to epilepsy in aging populations worldwide, with notable geographic variation [42].

This growing burden shows up concretely in health systems — more hospitalizations, more emergency visits, more long-term care needs [34] — along with elevated mortality driven by SUDEP, comorbidity, polypharmacy, and fall-related injury [22].

4. Pathophysiology and Etiology in Aging

Much of the increased seizure susceptibility in older brains traces back to structural and functional changes with age: neuronal loss, synaptic reorganization, shifting neurotransmitter systems, and altered neuronal excitability [9]. Changes to the blood-brain barrier compound this, affecting both how seizures arise and how drugs reach their targets [15].

Cerebrovascular disease tops the list of identifiable causes, responsible for 15–40% of cases [13,16,17]. Post-stroke epilepsy doesn't follow one timeline — it can show up right after an ischemic or hemorrhagic event or emerge years down the line [21,31], through mechanisms like cortical scarring, gliosis, and disrupted inhibitory circuits. Prophylactic antiseizure medication isn't recommended after stroke, though guidance on managing post-stroke epilepsy once it's established still needs sharpening [17].

Neurodegenerative disease is the other big driver: Alzheimer's disease alone raises epilepsy risk six- to tenfold [25], and the two conditions feed into each other in a bidirectional relationship [30,33]. Brain tumors, traumatic injury, metabolic disturbance, and infection make up most of the remaining cases [12,23], but even after a full workup, roughly half of late-onset epilepsy stays cryptogenic [13,18].

The aging brain also reacts to seizures differently than a younger one — status epilepticus and its associated mortality both occur more often [9], and pharmacodynamic sensitivity shifts in ways that affect both drug efficacy and toxicity [25]. It's a reminder that most antiepileptic drugs were designed without these age-specific mechanisms in mind [9].

5. Diagnostic Challenges

In older patients, diagnosis frequently gets delayed, missed, or simply wrong — the reasons span patient factors, physician factors, and limitations of the workup itself [5]. Seizures tend to go unwitnessed and present briefly and atypically [7,13], and because the symptoms overlap so heavily with other common conditions, both over- and under-diagnosis result [5,39].

Focal seizures with impaired awareness are the dominant type here, but the auras and automatisms that mark them in younger patients tend to be muted or absent [5,40]. Postictal confusion goes the other direction — it can drag on for days to weeks and gets mistaken for dementia or delirium as a result [5,13]. Nonconvulsive status epilepticus, more common in this group, demands a high index of suspicion and often prolonged EEG monitoring to catch [17,38].

The differential diagnosis list is long. Cardiac syncope stands out as a particular trap, since it can produce a loss of consciousness that looks much like a seizure [41]; transient ischemic attacks, metabolic disturbances, medication effects, sleep

disorders, and psychiatric conditions all crowd into the same space [7,23]. Lewy body dementia can mimic seizures and vice versa [30] — and with multiple conditions often coexisting in the same patient, sorting out which is which only gets harder.

EEG adds another layer of difficulty. Routine recordings often come back normal or only nonspecifically abnormal, and prolonged video-EEG — sometimes the only way to reach a diagnosis — can be logistically hard to arrange given mobility or cognitive limits [16,17]. Age-related background slowing and benign variants muddy the interpretation further [38], and even when abnormalities do show up, tying them to specific clinical events isn't always clean. In the end, reliable diagnosis rests on a detailed witness history, judicious prolonged EEG use, and neuroimaging to rule structural causes in or out [1,10].

6. Pharmacological Challenges

6.1 Polypharmacy

Polypharmacy ranks among the biggest obstacles to treating epilepsy safely in older adults. Managing several comorbidities usually means juggling several medications, which drives up the risk of adverse effects, interactions, and non-adherence [3,12]; many patients in this group are already on five or more drugs [7,21], largely because of cardiovascular disease, diabetes, osteoporosis, and psychiatric conditions [4,12].

Layering an antiepileptic drug onto that regimen introduces its own set of problems. Pill burden alone can undermine adherence, especially where cognitive impairment or limited support is already a factor [24]. Every additional drug multiplies interaction risk [2,3]. Side effects that a younger patient tolerates fine — sedation, cognitive slowing — can trigger falls, fractures, or worsening dementia in an older one [14,21]. And with so many drugs in the mix, pinning a symptom on any one of them gets genuinely difficult [23].

Managing all this calls for a full medication review any time antiepileptic therapy starts or changes [3], leaning toward agents with minimal interaction potential and steering clear of enzyme inducers [13,18]. That's part of why levetiracetam and lamotrigine are preferred [13,20] — and simplifying to once-daily dosing where feasible helps with both adherence and overall burden [20].

6.2 Drug Interactions

Most interaction risk in older epilepsy patients traces back to enzyme-inducing agents. Phenytoin, carbamazepine, and phenobarbital ramp up hepatic cytochrome P450 activity, which speeds the breakdown of anticoagulants, cardiovascular drugs, immunosuppressants, and hormonal therapies [1,7] — potentially undercutting treatment for whatever comorbid condition those drugs are managing [18]. The reverse happens too: medications for other conditions can push antiepileptic drug levels up or down [12,21].

The clinical stakes here are real, especially around cardiac medications given how common cardiovascular disease is in this population [19]. Enzyme induction can blunt anticoagulation, raising thromboembolic risk in patients with atrial fibrillation or a prior stroke [35], and can throw off blood pressure or lipid control [12]. Carbamazepine and oxcarbazepine bring their own hyponatremia risk, which worsens further with diuretics or SSRIs [7,18].

Cutting these risks generally means favoring agents like levetiracetam, lamotrigine, and gabapentin, none of which meaningfully affects hepatic enzymes or the pharmacokinetics of co-medications [1,13,20,27]. When an enzyme inducer can't be avoided, close monitoring and dose adjustment of the other medications becomes essential [18] — alongside a regular look at over-the-counter drugs and supplements [12] and coordination between neurology, primary care, and pharmacy [4].

6.3 Altered Pharmacokinetics

Aging changes how the body absorbs, distributes, metabolizes, and eliminates drugs — all of which feed into antiepileptic dosing [7,13]. Absorption shifts like reduced gastric acid, slower motility, and altered splanchnic flow tend to have only modest clinical impact [12]. Distribution changes more substantially: less lean mass, more fat, and reduced total body water shift the volume of distribution for both lipophilic and hydrophilic drugs [3,27]. As serum albumin declines, protein binding drops for drugs like phenytoin and valproate, pushing up the free, active fraction and creating a toxicity risk even when total drug levels look “normal” [3,7,18,24].

Hepatic metabolism slows as liver blood flow, liver mass, and phase I enzyme activity decline, stretching out half-lives and generally calling for doses 25–33% lower than in younger adults [14,18,21] — though exactly how much varies by drug and metabolic pathway [27]. Renal elimination declines too, and falling glomerular filtration rate affects drugs like gabapentin, levetiracetam, and topiramate, which need dosing tied to creatinine clearance [7,13]; overlook that, and accumulation and toxicity follow easily [14].

Pharmacodynamic sensitivity climbs as well — the aging brain reacts more strongly to CNS depressant effects, raising the risk of sedation, cognitive impairment, and psychomotor slowing [3,21,25,27]. Layer that on top of the pharmacokinetic changes already described, and the therapeutic window narrows considerably [6,17]. The upshot is the familiar rule of thumb, “start low, go slow”: begin at reduced doses, titrate gradually, and monitor both efficacy and tolerability along the way [7,13,24], checking renal and hepatic function regularly and, for highly protein-bound drugs, free drug levels [1,18].

7. Selection of Antiepileptic Drugs in the Elderly

Choosing a drug in this population means weighing efficacy, tolerability, interaction potential, pharmacokinetics, comorbidities, and whatever else the patient is already taking. Newer agents generally beat older ones on tolerability and safety while delivering comparable seizure control [1,2]. Both the ILAE/AES-AAN and the Korean Epilepsy Society point to lamotrigine or levetiracetam — with gabapentin also endorsed by ILAE — as first-line monotherapy for newly diagnosed focal seizures in older adults [13].

Lamotrigine has solid trial support behind it: efficacy on par with carbamazepine, but markedly better tolerated [1,27], and the highest 12-month retention rate of any antiepileptic drug at 78.6–79% [7,29]. Interaction potential is minimal and it doesn't induce hepatic enzymes, though it needs slow titration — usually starting at 50 mg twice daily — to keep rash risk down [27].

Levetiracetam holds similar favor, matching carbamazepine's efficacy with better tolerability and a 73% retention rate [1,13]. It's renally eliminated with no hepatic metabolism involved, skips the need for prolonged titration, and is generally well tolerated on a twice-daily schedule [27] — though behavioral side effects like irritability can pose a problem for patients with psychiatric comorbidity [1].

Gabapentin, also renally cleared, is recommended as monotherapy for focal seizures, typically starting at 400 mg three times daily and adjusted for renal function [13,18,27]. Lacosamide, meanwhile, has shown both a lower side-effect rate (35% versus 53%) and better efficacy (73% versus 60%) than carbamazepine in patients over 65, with minimal interactions and dosing twice daily [1].

Older agents — phenytoin, carbamazepine, phenobarbital — are generally passed over as first-line therapy because of unfavorable pharmacokinetics, interaction burden, and adverse-effect rates [13,24]. Phenytoin's nonlinear kinetics and high protein binding make its dosing unpredictable [24]; carbamazepine, despite real efficacy, can cause hyponatremia, cognitive effects, and cardiac conduction changes [7,18]; phenobarbital's sedative and cognitive burden rules it out for most older patients [24]. Where cost or circumstance still calls for one of these drugs, closer monitoring becomes essential [24].

“Start low, go slow” remains the operating principle — initial doses typically sit at 25–50% of the standard adult starting dose, titrated up according to response [1,7], with lower maintenance targets than younger adults would receive [18]. Monotherapy succeeds in 60–70% of older patients [21]; when it doesn't, switching to a different single agent works better than adding a second drug, succeeding in 50–60% of cases [21]. Throughout, ongoing monitoring of efficacy, adverse effects, organ function, and drug levels stays essential [1,3,18].

8. Non-Pharmacological Challenges

Non-pharmacological approaches — surgery, neuromodulation, lifestyle changes — work alongside drug therapy but carry their own set of considerations in older patients. Epilepsy surgery, once thought of as mainly a younger patient's option, is now viable for carefully selected older adults with drug-resistant epilepsy [8,19]. Seizure-freedom rates can match or beat those in younger adults: 63% for ages 50–59, 77% for 60–69, and 70% for 70 and up [19] — evidence that age by itself shouldn't rule out a surgical evaluation [8].

That said, surgery in this group brings distinct risks. A higher comorbidity burden can pull seizure-freedom rates down and push up non-home discharge rates [8], and frailty shapes both the surgical decision and what happens after [8]. Complications like language disturbance, infarction, and subdural hygroma occur more frequently [8], and cognitive outcomes — verbal memory after dominant-hemisphere resection especially — show more variability [8]. Even so, quality of life tends to improve after a successful surgery, and referral is recommended up to age 70 regardless of seizure type or comorbidity [19].

For patients who aren't ideal surgical candidates, less invasive options exist. Laser interstitial thermal therapy offers a lower-risk route into focal epilepsy [8]. Neuromodulation — vagus nerve stimulation, responsive neurostimulation, deep brain stimulation — can cut seizure frequency and improve quality of life without the risks that come with resective surgery [8,28]. VNS in particular has shown real benefit in older patients, though deep brain stimulation is still held back by cost, risk, and a thin evidence base [28].

Beyond any procedure, comprehensive care includes lifestyle changes, psychosocial support, and coordination across disciplines [4] — sleep hygiene, stress management, avoiding known triggers [4], plus attention to the mental-health and social toll of the diagnosis itself [4]. Educating patients and caregivers on seizure recognition, first aid, and fall prevention matters given the elevated injury risk in this group [22], as does handling driving restrictions and stigma with sensitivity [10,37].

9. Comorbidities and Quality of Life

Comorbidity defines the epilepsy experience for older adults, shaping how it presents, how it's treated, and how it turns out. Most patients in this group are managing several conditions at once [3,12]. Cardiovascular disease — hypertension, coronary disease, heart failure, atrial fibrillation — shows up especially often and interacts with epilepsy care in more than one way [7,21]; cerebrovascular disease, notably, is both the leading cause of epilepsy in this group and a continuing influence on how well seizures are controlled [13,17]. Cognitive impairment and dementia frequently coexist too, in a relationship that runs both ways [25,30].

These comorbidities complicate care on multiple fronts. They fuel polypharmacy and the interaction risk that comes with it [3,12]; they can take certain antiepileptic drugs off the table entirely — cardiac conduction abnormalities ruling out sodium-channel blockers, renal insufficiency demanding dose adjustment [7,13]; they raise vulnerability to adverse effects, whether that's sedation worsening cognition, gait instability raising fall risk, or hyponatremia in patients already on diuretics [7,18]; and they make correctly attributing symptoms that much harder [23].

A few specific concerns are worth calling out: osteoporosis and fracture risk, made worse by both epilepsy itself and enzyme-inducing drugs [27]; falls, driven by the combination of seizures, medication effects, and comorbidity [22,26]; depression and anxiety, common on their own and sometimes worsened by antiepileptic drugs or the diagnosis itself [34]; and diabetes, which opens the door to interactions between diabetes and epilepsy medications [36]. Managing all of this well requires integrated, multidisciplinary care [4].

Quality of life gets shaped by seizure frequency and severity, medication side effects, comorbidity, functional limitations, and the psychosocial weight the diagnosis carries [4]. Fear of a public seizure can push patients toward social isolation [37]; driving restrictions, though necessary, can seriously limit independence — especially where public transportation is limited [10]; and stigma persists even among older populations [10].

Improving quality of life means looking beyond seizure control alone toward minimizing side effects, protecting cognition, and supporting independence and social engagement [5,24]. That calls for care models that bring together the neurological, functional, cognitive, and psychosocial dimensions of the disease [4,32], along with patient and caregiver education, support groups, and access to mental health care [22], plus regular quality-of-life assessment using validated tools [4]. Ultimately, success should be measured against each patient's own goals and circumstances — not seizure count alone.

10. Future Directions and Recommendations

The biggest constraint on this field remains its evidence base: older adults make up fewer than 10% of antiepileptic drug trial participants, and just 1% are over 75 [25,29]. Most of the drugs in use today were never tested in this population, so current recommendations are essentially extrapolated from younger adults [9,14]. Future trials need to actively recruit older patients, with designs built to account for comorbidity, polypharmacy, and outcomes like cognition, falls, and quality of life [5,32].

Several research priorities follow from this. Basic science into how seizures arise in the aging brain — blood-brain barrier changes, shifting neuronal networks and neurotransmission — could inform age-specific therapies down the line [5,9,15].

Comparative-effectiveness research, including causal-inference methods applied to observational data, can help fill gaps where randomized trials just aren't feasible [25]. Non-pharmacological interventions need dedicated study in older populations too [8,32], and mortality research — SUDEP incidence and risk factors in this group especially — remains an urgent gap [22].

Clinically, raising provider awareness of atypical seizure presentation could shorten the diagnostic delay that's so common now [22,38]. Age-specific treatment guidelines covering drug selection, dosing, and monitoring would support more consistent practice [12,13], as would standardized medication-review protocols [4] and routine use of frailty and geriatric-assessment tools to guide individualized care [8,22].

Multidisciplinary care may be the single biggest lever for better outcomes here — bringing neurology together with geriatric medicine, pharmacy, nursing, social work, and mental health [4,32], backed by better coordination between specialists [4], dedicated geriatric epilepsy clinics [32], and telemedicine to widen access and monitoring [22].

Policy has a role to play too — regulatory incentives for including older adults in trials [25], quality metrics specific to geriatric epilepsy care [32], reimbursement that reflects the time multidisciplinary management actually takes [4], public education to chip away at stigma [10], and workforce training to build expertise in this growing area [32].

11. Conclusion

Epilepsy in older adults amounts to a growing public health challenge, marked by high incidence, atypical presentation, and treatment needs that diverge fundamentally from what's seen in younger populations. Diagnosis is often delayed by subtle symptoms and a broad differential; the underlying pathophysiology is dominated by cerebrovascular and neurodegenerative causes, though a substantial share of cases stay unexplained. Treatment has to account for altered pharmacokinetics, comorbidity, and polypharmacy, which is why newer agents like levetiracetam and lamotrigine are favored for their tolerability, guided throughout by the “start low, go slow” principle. Surgery and neuromodulation offer real options for selected patients, pushing back on older assumptions about age limits on intervention — but comprehensive care still has to address comorbidity, quality of life, and psychosocial needs.

The central gap is still evidence: older adults remain underrepresented in the trials that shape their own care. Closing that gap — through more inclusive research, age-specific guidelines, multidisciplinary care models, and supportive policy — is only becoming more urgent as populations age. In the meantime, clinicians can help by staying alert to atypical presentations, choosing drugs based on tolerability and

interaction profile rather than efficacy alone, and treating the whole patient rather than just the seizure count.

References

- [1] A. Rohrachner and E. Trinka, “[Epilepsy in the aged: Challenges in diagnostics and treatment],” *Zeitschrift Fur Gerontologie Und Geriatrie*, vol. 54, no. 4, pp. 395–408, Apr. 2021, doi: 10.1007/S00391-021-01882-Y.
- [2] R. E. Ramsay, A. J. Rowan, and F. Pryor, “Special considerations in treating the elderly patient with epilepsy,” *Neurology*, vol. 62, no. 5, Mar. 2004, doi: 10.1212/WNL.62.5_SUPPL_2.S24.
- [3] L. J. Willmore, “Management of epilepsy in the elderly,” *Epilepsia*, vol. 37, no. 6, Dec. 1996, doi: 10.1111/J.1528-1157.1996.TB06036.X.
- [4] K. Gooneratne, “Epilepsy in older adults,” *Journal of the Ceylon College of Physicians*, vol. 55, no. 1, pp. 51–57, July 2024, doi: 10.4038/jccp.v55i1.8052.
- [5] J. N. Acharya and V. J. Acharya, “Epilepsy in the elderly: Special considerations and challenges,” *Annals of Indian Academy of Neurology*, vol. 17, no. 5, p. 18, Mar. 2014, doi: 10.4103/0972-2327.128645.
- [6] P. V. Motika and D. C. Spencer, “Treatment of Epilepsy in the Elderly,” *Current Neurology and Neuroscience Reports*, vol. 16, no. 11, pp. 96–96, Sept. 2016, doi: 10.1007/S11910-016-0696-8.
- [7] S. K. Lee, “Epilepsy in the Elderly: Treatment and Consideration of Comorbid Diseases,” *Journal of Epilepsy Research*, May 2019.
- [8] V. Punia, “The landscape of epilepsy surgery in older adults: Challenges and opportunities,” *Epilepsia open*, May 2025, doi: 10.1002/epi4.70062.
- [9] L. A. Shapiro, “From Bench to Bedside: Unique Challenges of Treating Epilepsy in the Aging Brain,” *Aging and Disease*, vol. 2, no. 4, pp. 275–277, Apr. 2011.
- [10] D. Sone, “[Epilepsy in the Elderly Population: Clinical Practice and Recent Updates],” *Brain and nerve*, vol. 75, no. 4, pp. 311–315, Apr. 2023, doi: 10.11477/mf.1416202331.
- [11] M. Holtkamp and G. Krämer, “Antiepileptic pharmacotherapy in old age: evidence-based approach versus clinical routine — English Version,” *Zeitschrift Für Epileptologie*, vol. 35, no. S2, pp. 105–112, Nov. 2022, doi: 10.1007/s10309-022-00492-x.
- [12] U. Kaur, I. Chauhan, I. S. Gambhir, and S. S. Chakrabarti, “Antiepileptic drug therapy in the elderly: a clinical pharmacological review,” *Acta Neurologica Belgica*, vol. 119, no. 2, pp. 163–173, Apr. 2019, doi: 10.1007/S13760-019-01132-4.

- [13] J. G. Seo et al., "Pharmacological Treatment of Epilepsy in Elderly Patients," *Journal of Clinical Neurology*, vol. 16, no. 4, pp. 556–561, Oct. 2020, doi: 10.3988/JCN.2020.16.4.556.
- [14] R. Chaisewikul, "Management of Epilepsy: Overview," vol. 60, no. 2, pp. 85–89, Apr. 2017.
- [15] X. Chen et al., "Challenges and prospects in geriatric epilepsy treatment: the role of the blood-brain barrier in pharmacotherapy and drug delivery," *Frontiers in Aging Neuroscience*, Feb. 2024, doi: 10.3389/fnagi.2024.1342366.
- [16] H. Stefan, "Epilepsy in the elderly: facts and challenges," *Acta Neurologica Scandinavica*, vol. 124, no. 4, pp. 223–237, Oct. 2011, doi: 10.1111/J.1600-0404.2010.01464.X.
- [17] T. Kunieda, "[Elderly Onset Epilepsy and Post-Stroke Epilepsy]," *No shinkei geka. Neurological surgery*, vol. 51, no. 1, pp. 59–67, Jan. 2023, doi: 10.11477/mf.1436204715.
- [18] P. N. Vlasov, O. V. Andreeva, and O. V. Andreyeva, "Особенности терапии эпилепсии у пациентов среднего и пожилого возраста," *Neurology, neuropsychiatry, Psychosomatics*, vol. 1, no. 1, pp. 54–58, Mar. 2009, doi: 10.14412/2074-2711-2009-25.
- [19] P. Kerezoudis, G. A. Worrell, and J. J. V. Gompel, "Letter to the Editor regarding 'Management of epilepsy in older adults: A critical review by the ILAE Task Force on Epilepsy in the Elderly,'" *Epilepsia*, vol. 64, no. 1, pp. 247–248, Nov. 2022, doi: 10.1111/epi.17456.
- [20] A. Biraben, L. D. Clerck, and A. Nica, "Epilepsy treatment in the elderly," vol. 17, no. 1, pp. 31–38, Mar. 2019, doi: 10.1684/PNV.2019.0781.
- [21] B. Sarmah, P. S. Kharbanda, and S. Prabhakar, "Seizures and Epilepsy in Elderly: A Tertiary Care Centre Hospital Based Study," *Journal of Evolution of Medical and Dental Sciences*, Nov. 2015, doi: 10.14260/jemds/2015/2306.
- [22] Hashmi, Gundlapalli, and Zawar, "Mortality in older adults with epilepsy: An understudied entity," *Epilepsia open*, 2025, doi: 10.1002/epi4.13098.
- [23] A. Anghelescu, "Late-onset epilepsy in the elderly: difficulties of diagnosis and personalized pharmacological management, with particularities to covid-19 pandemic — systematic review of literature," *Farmacia*, vol. 70, no. 2, pp. 184–197, Apr. 2022, doi: 10.31925/farmacia.2022.2.2.
- [24] E. O. Sanya, "Peculiarity of epilepsy in elderly people: a review," *West African journal of medicine*, vol. 29, no. 6, pp. 365–372, Sept. 2011, doi: 10.4314/WAJM.V29I6.68260.

- [25] L. M. V. R. Moura, M. B. Westover, D. Kwasnik, A. J. Cole, and J. Hsu, "Causal inference as an emerging statistical approach in neurology: an example for epilepsy in the elderly," *Clinical Epidemiology*, vol. 9, pp. 9–18, Dec. 2016, doi: 10.2147/CLEP.S121023.
- [26] Dons, Buron, Laursen, Norsk, Karlsen, and Thomsen, "[Not Available]," *Ugeskrift for laeger*, 2024, doi: 10.61409/V04240297.
- [27] M. J. Brodie, "Treatment for epilepsy in later life," *Epilepsy & Seizure*, vol. 3, no. 1, pp. 24–33, Jan. 2010, doi: 10.3805/EANDS.3.24.
- [28] Gallo, "Epilepsy, surgery, and the elderly," *Epilepsy research*, 2006, doi: 10.1016/j.epilepsyres.2005.07.021.
- [29] A. Romigi, E. A. Femia, C. Fattore, G. Vitrani, G. D. Gennaro, and V. Franco, "Zonisamide in the management of epilepsy in the elderly," *Clinical Interventions in Aging*, vol. 10, pp. 931–937, June 2015, doi: 10.2147/CIA.S50819.
- [30] C. Hommet, K. Mondon, V. Camus, B. de Toffol, and T. Constans, "Epilepsy and Dementia in the Elderly," *Dementia and Geriatric Cognitive Disorders*, vol. 25, no. 4, pp. 293–300, Mar. 2008, doi: 10.1159/000119103.
- [31] Er-Riouiche et al., "[Post stroke seizures and Vascular epilepsy]," *La Tunisie medicale*, 2025, doi: 10.62438/tunismed.v103i3.5547.
- [32] Roberson, Hope, Martin, and Schmidt, "Geriatric epilepsy: research and clinical directions for the future," *Epilepsy & behavior: E&B*, 2011, doi: 10.1016/j.yebeh.2011.04.005.
- [33] Akamatsu, "[Epilepsy and Dementia]," *No shinkei geka. Neurological surgery*, 2025, doi: 10.11477/mf.030126030530050975.
- [34] L. A. Copeland et al., "Psychiatric and medical admissions observed among elderly patients with new-onset epilepsy," *BMC Health Services Research*, vol. 11, no. 1, pp. 84–84, Apr. 2011, doi: 10.1186/1472-6963-11-84.
- [35] Zhao, Li, Kälviäinen, Jolkkonen, and Zhao, "Impact of drug treatment and drug interactions in post-stroke epilepsy," *Pharmacology & therapeutics*, 2022, doi: 10.1016/j.pharmthera.2021.108030.
- [36] M. M. Girgis, K. Fekete, N. Homoródi, S. Márton, I. Fekete, and L. Horváth, "Use of Complementary and Alternative Medicine Among Patients With Epilepsy and Diabetes Mellitus, Focusing on the Outcome of Treatment," *Frontiers in neuroscience*, vol. 15, Jan. 2022, doi: 10.3389/fnins.2021.787512.
- [37] W. R. Miller, J. M. Buelow, and T. Bakas, "Older adults and new-onset epilepsy: experiences with diagnosis," *Journal of Neuroscience Nursing*, vol. 46, no. 1, pp. 2–10, Feb. 2014, doi: 10.1097/JNN.0000000000000032.

- [38] T. U. Mayer, "Semiology of epileptic seizures in old age and the differential diagnosis — English Version," *Zeitschrift Für Epileptologie*, vol. 35, no. S2, pp. 90–95, Nov. 2022, doi: 10.1007/s10309-022-00484-x.
- [39] M. Saad, S. Zakarya, and H. Salama, "Epilepsy in the Elderly: Dilemma of Diagnosis," Jan. 2011.
- [40] A. Fujimoto et al., "Short duration of focal onset awareness and impaired awareness seizure are characteristic features of epilepsy in elderly patients," *Neuropsychiatric Disease and Treatment*, 2018, doi: 10.2147/NDT.S179720.
- [41] Jansen and van der Velde, "Syncope in older adults: challenges, approach and treatment," *Age and ageing*, 2024, doi: 10.1093/ageing/afad245.
- [42] J. Xue et al., "Global, regional, and national burden of idiopathic epilepsy in older adults, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021," *BMC Medicine*, vol. 23, no. 1, July 2025, doi: 10.1186/s12916-025-04268-8.

Students' Perceptions of Online Learning in Higher Education: A Comparative Study of Pre and Post Pandemic Experiences

Marsela Shehu

Sports University of Tirana, Faculty of Movement Science, Department of Education and Health

marsela.shehu@gmail.com

Abstract

The COVID-19 pandemic accelerated the adoption of online learning across higher education institutions worldwide, transforming digital education from an emergency response into an integral component of modern teaching and learning. Although face-to-face instruction has largely resumed, online and blended learning continue to play an important role in university education. This study aims to compare students' perceptions of online learning before and after the COVID-19 pandemic and to examine its perceived effectiveness as a complementary teaching approach in higher education. A quantitative research design was employed using a structured questionnaire administered to students at the Sports University of Tirana, Albania. Descriptive and comparative statistical analyses were conducted to identify changes in students' attitudes toward online education across the two periods. The findings indicate that students recognize the flexibility and accessibility of online learning, particularly for theoretical courses, while continuing to value face-to-face interaction for practical learning, communication, and academic engagement. The results suggest that online education is most effective when integrated within a blended learning model rather than used as a complete substitute for traditional classroom instruction. This study contributes to the growing body of post-pandemic research by providing empirical evidence on the evolving perceptions of university students toward online learning and offers practical implications for the future design of digital and hybrid education in higher education institutions.

Keywords: online learning, higher education, students' perceptions, blended learning, COVID-19, post-pandemic education.

Introduction

The rapid advancement of digital technologies has transformed teaching and learning practices in higher education, making online learning an increasingly important component of contemporary educational systems. Although online education had already been adopted by many universities worldwide prior to the COVID-19 pandemic, the global health crisis accelerated its implementation and highlighted its potential as an alternative and complementary mode of instruction. In Albania, the widespread adoption of online learning occurred primarily during the pandemic, when higher education institutions were required to transition from traditional face-to-face teaching to remote learning environments. Online learning is commonly regarded as a student-centered educational approach that promotes flexibility, accessibility, and self-directed learning. Previous studies have emphasized that its effectiveness depends not only on technological infrastructure but also on students' individual characteristics, learning preferences, and socio-economic circumstances. This is particularly relevant for students who combine academic studies with employment and family responsibilities, as online learning offers greater flexibility than conventional classroom-based instruction (Gudivada et al., 2013). Research conducted in higher education has demonstrated the growing significance of online learning. Allen and Seaman (2003) reported that a substantial proportion of higher education institutions in the United States had already integrated online components into their courses. Furthermore, Mason (1998) distinguished between partially online and fully online learning environments, highlighting the diversity of digital education models. While partially online courses combine traditional instructional resources with online activities, fully online courses rely almost entirely on digital platforms for teaching, communication, and assessment. Despite its advantages, the implementation of online learning has also revealed challenges related to technological access, student engagement, and learning effectiveness. Studies conducted in Albania have identified disparities in students' access to digital devices, internet connectivity, and suitable learning environments. According to findings reported by the Albanian Socio-Economic Think Tank (ASET), many students relied on a limited number of devices and faced difficulties participating effectively in online learning activities due to inadequate study conditions. These challenges were particularly evident in study programs requiring practical and laboratory-based instruction. The case of the Sports University of Tirana presents a unique context for examining students' perceptions of online learning. Given the practical nature of many courses, online education provided a necessary alternative during periods of restricted physical attendance but could not fully replace face-to-face instruction. Nevertheless, it enabled the continuation of theoretical learning and offered valuable insights into the role of digital technologies in higher education. Although traditional classroom teaching has largely resumed, online and blended learning continue to be integrated into university curricula. Consequently, understanding students'

experiences and perceptions of online learning remains important for informing future educational practices. This study aims to compare students' perceptions of online learning before and after the pandemic and to evaluate its effectiveness as a complementary teaching approach in higher education. Specifically, the study investigates whether online learning met students' academic expectations and explores the extent to which it can be incorporated into future teaching models alongside conventional classroom instruction.

Literature Review

Online Learning in Higher Education

The rapid development of digital technologies has significantly transformed higher education, expanding opportunities for teaching and learning beyond traditional classroom environments. Online learning refers to the delivery of educational content through digital platforms that facilitate communication, interaction, assessment, and access to learning resources regardless of geographical location. Over the last two decades, advances in information and communication technologies have contributed to the increasing adoption of online education across universities worldwide (Darkwa & Antwi, 2021). The growth of online learning has enabled greater flexibility and accessibility for students, particularly those balancing academic responsibilities with employment and family commitments. Unlike conventional classroom-based instruction, online learning allows learners to access course materials at their own pace and from various locations. Consequently, higher education institutions have increasingly incorporated online and blended learning approaches into their curricula to accommodate diverse student needs and learning preferences.

Online Learning versus Face-to-Face Learning

The effectiveness of online learning compared to traditional classroom instruction has been extensively examined in educational research. Studies have generally reported that academic performance is not solely determined by the mode of delivery but rather by instructional design, student engagement, and the quality of interaction between instructors and learners. Anna Ya Ni (2013) found that student achievement may be comparable across online and face-to-face environments; however, differences emerge regarding interaction patterns, student persistence, and engagement levels. Online learning environments often provide opportunities for increased participation, particularly among students who may be less inclined to contribute during face-to-face classes. Digital communication tools can facilitate discussion, collaboration, and continuous access to learning resources. Nevertheless, challenges such as reduced social interaction, technological barriers, and difficulties maintaining concentration during extended screen exposure continue to affect students' learning experiences. Similarly, Effendi et al. (2022) reported that students valued the flexibility, affordability, and accessibility of online education, while also

highlighting concerns related to internet connectivity, social isolation, and reduced attention during virtual sessions. In contrast, face-to-face learning was perceived as more effective in fostering interpersonal interaction, motivation, peer learning, and the development of a supportive educational environment.

Online Learning in Practice-Oriented Programs

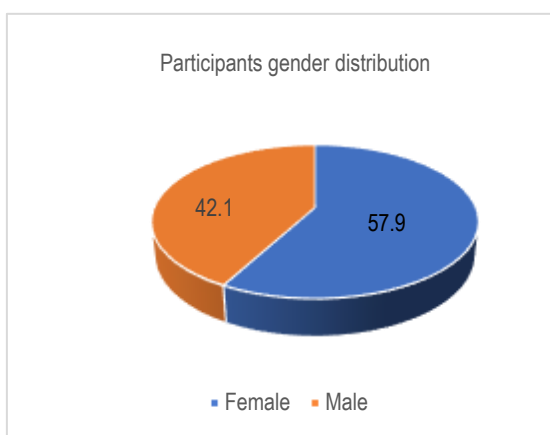
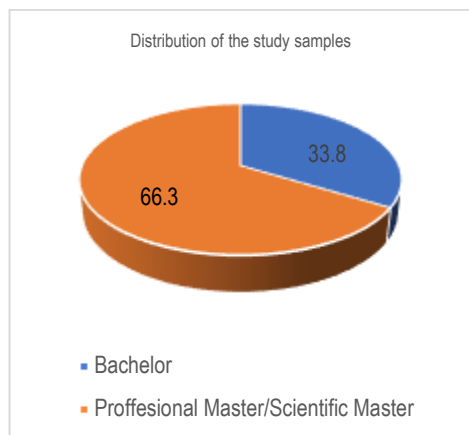
Despite the advantages associated with digital education, concerns remain regarding its effectiveness in courses that require practical skill development. This issue is particularly relevant in disciplines such as sports sciences, physical education, health sciences, and laboratory-based programs, where experiential learning and direct supervision play a critical role. Yu and Jee (2021) investigated online practical exercise courses and found that both instructors and students perceived limitations in learner engagement and skill development. Educators reported that students often completed practical assignments primarily to satisfy course requirements rather than to improve their physical performance. Furthermore, both instructors and learners expressed concerns regarding the limited opportunities for collaboration, peer interaction, and performance feedback in online practical classes. These findings suggest that while online learning can effectively support theoretical instruction, its application in practice-oriented disciplines remains challenging.

Given these considerations, the current study examines students' perceptions of online learning in higher education by comparing experiences before and after the pandemic. Particular attention is given to evaluating the perceived effectiveness of online learning as a complementary educational approach and its potential integration into future blended learning models.

Research Methodology

Research Design and Participants

This study employed a quantitative cross-sectional research design to examine students' perceptions of online learning before and after the COVID-19 pandemic. The study sample consisted of 240 students (N = 240) enrolled at the Sports University of Tirana, Albania. Participants were recruited from two academic units: The Faculty of Movement Sciences and the Faculty of Physical Activity and Recreation. Of the total sample, 81 students (33.8%) were enrolled in the Bachelor's programme in *Physical Activity and Recreation*, while 159 students (66.3%) were enrolled in the Professional Master's programme in *Teacher of Physical Education and Health* (Figure 1). Participants ranged in age from 18 to 24 years. The sample included 139 female students (57.9%) and 101 male students (42.1%) (Figure 2).



Research Instrument

Data were collected using a structured questionnaire consisting of nine items, including closed-ended, multiple-choice, and open-ended questions. Specifically, 56% of the questions were closed-ended, 22% were multiple-choice, and 22% were open-ended. The questionnaire was designed to assess students' perceptions of online learning, compare their experiences before and after the COVID-19 pandemic, and evaluate their views regarding the future use of online education in higher education. Most items employed a five-point Likert scale, ranging from *strongly disagree* to *strongly agree*. The questionnaire was administered directly by the researchers. Participation was voluntary, and all respondents remained anonymous. Ethical principles concerning informed consent, confidentiality, and anonymity were strictly respected throughout the data collection process.

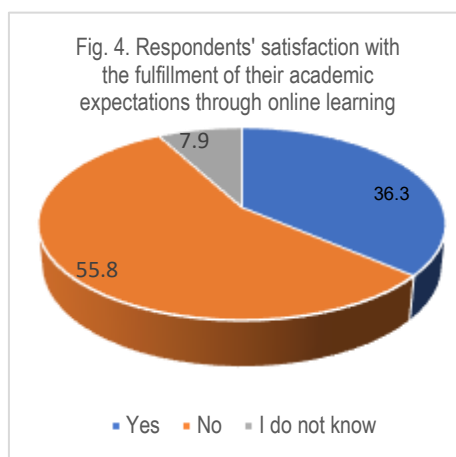
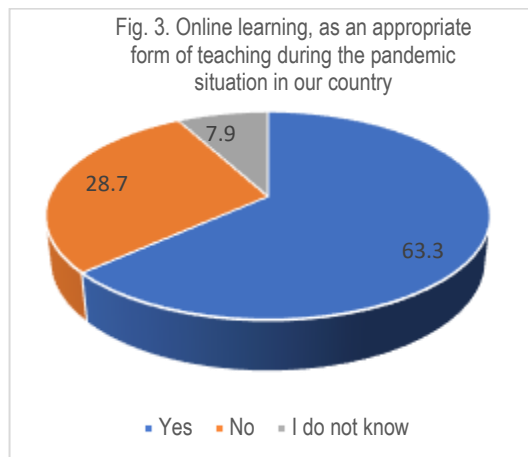
Statistical Analysis

The collected data were analysed using IBM SPSS Statistics Version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participants' responses. Comparative analyses were conducted to identify differences in students' perceptions before and after the COVID-19 pandemic. Responses to open-ended questions were analysed using qualitative content analysis to identify common themes and support the quantitative findings.

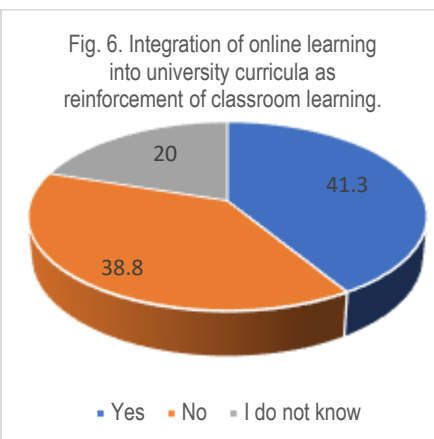
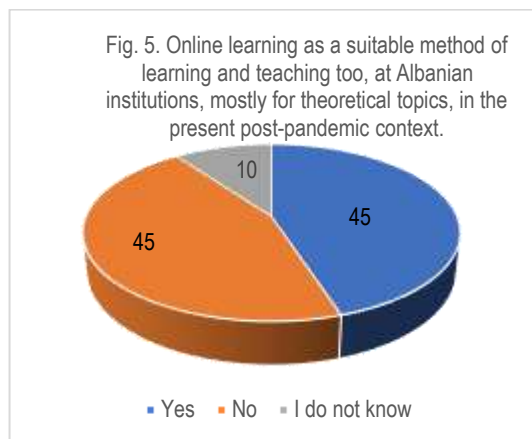
Results

The results showed that 63.3% of participants considered online learning to be an effective instructional method during the COVID-19 pandemic, whereas 28.7% disagreed (Figure 3). Positive perceptions were more frequently reported among female students enrolled in the Professional Master's programme. Overall, 55.8% of respondents reported that online learning did not fully meet their academic

expectations. Dissatisfaction was more prevalent among students enrolled in the second cycle of studies (Figure 4).

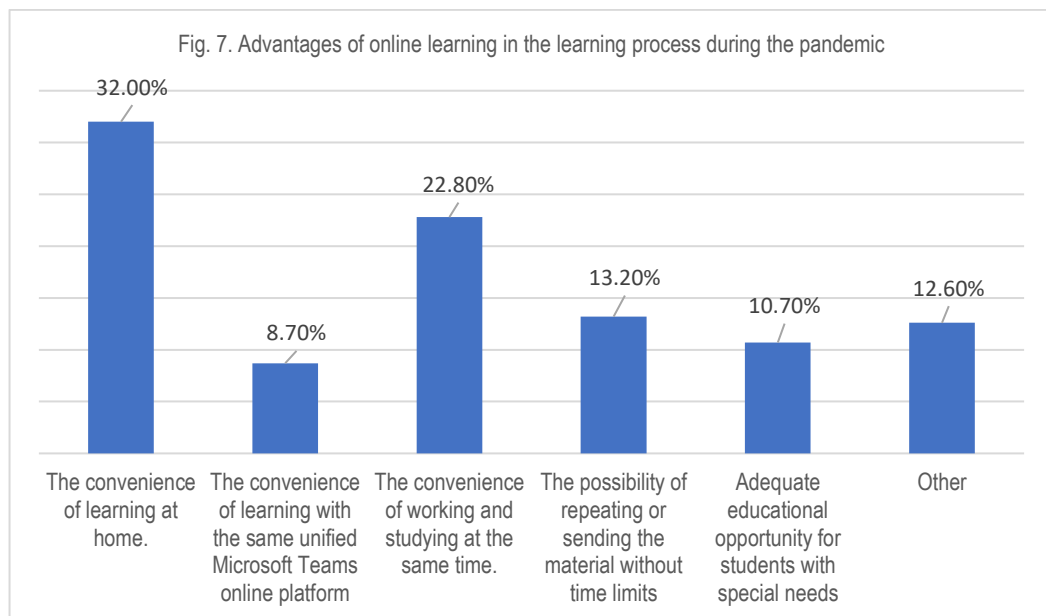


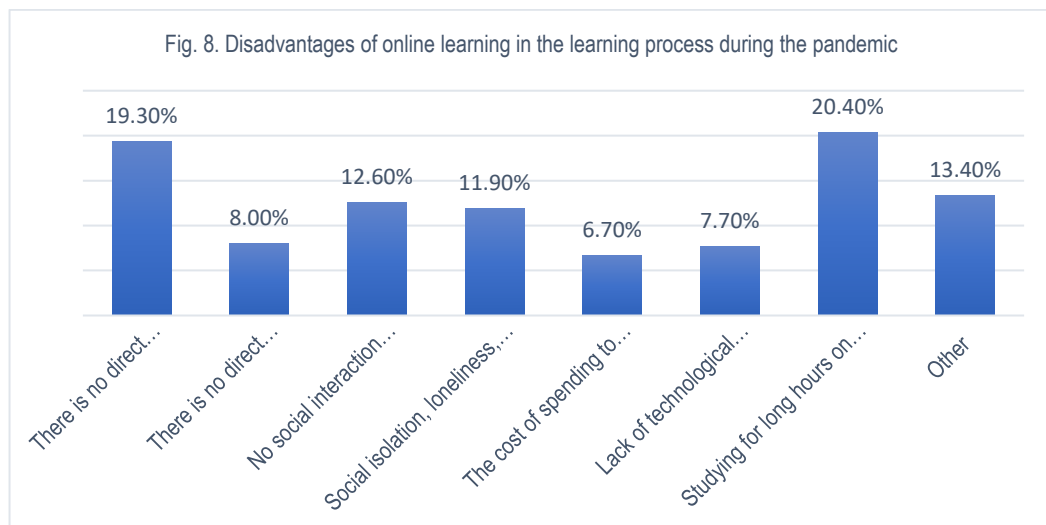
When asked whether online learning should continue to be used for theoretical courses in Albanian universities, 45% of participants responded positively, whereas an equal proportion (45%) disagreed. The remaining respondents were undecided (Figure 5). Regarding the future use of online learning, 41.3% of respondents supported its integration as a complementary component of traditional classroom teaching. In contrast, 38.8% did not support the use of online learning as a supplement to face-to-face instruction (Figure 6).



The most frequently reported advantage of online learning was flexibility. Specifically, 32% of respondents indicated that studying from home facilitated the combination of work and academic responsibilities. Additionally, 12.6% highlighted the benefits of online learning for students living in rural areas, where daily commuting to university may be challenging. Participants identified several

disadvantages associated with online learning. The most commonly reported concerns were the lack of direct interaction with instructors and reduced social communication with classmates. Approximately 20.4% of respondents reported that prolonged screen time negatively affected their physical and psychological well-being, while 13.4% considered online learning unsuitable for practical courses requiring demonstrations and hands-on activities. Furthermore, 11.9% reported experiencing anxiety and stress during online learning. Most participants reported attending online classes using smartphones rather than computers. Respondents indicated that this frequently led to interruptions during lessons and negatively affected their learning experience (Figures 7 and 8).





Analysis of the open-ended responses indicated that students generally expressed positive emotions upon returning to face-to-face instruction. The most frequently mentioned themes included direct communication with instructors, increased social interaction, and a stronger sense of engagement in the learning process. Representative responses included:

"I felt very good about the possibility of direct communication with the teachers."

"I feel better because I can socialize."

Several respondents also suggested that theoretical courses could continue to be delivered online, whereas practical courses should remain face-to-face. This finding supports students' preference for a blended learning approach rather than exclusively online or traditional instruction.

Discussion

The findings of this study demonstrate that students' perceptions of online learning have evolved considerably since the COVID-19 pandemic. Although most participants acknowledged that online learning was an effective solution during the public health emergency, they generally viewed it as a complementary rather than a replacement for face-to-face education. These findings reflect the transition of higher education from emergency remote teaching to more sustainable digital and blended learning models. A key finding of this study is that students considered online learning particularly suitable for theoretical courses, whereas practical subjects were perceived as significantly less effective in the online environment. This result is consistent with previous research indicating that practical and laboratory-based disciplines require direct interaction, demonstration, and immediate feedback, which

are difficult to replicate through virtual platforms (Shehu, 2021). Given the practical nature of sport sciences, physical education, and movement-based courses, students naturally expressed a stronger preference for in-person instruction in these subjects. Although almost two-thirds of respondents evaluated online learning positively during the pandemic, more than half reported that it did not fully meet their academic expectations. This apparent contradiction suggests that students recognized the necessity of online education under exceptional circumstances while simultaneously acknowledging its limitations in supporting engagement, communication, and learning outcomes. Similar findings have been reported in recent international studies, which conclude that emergency online learning ensured educational continuity but could not entirely replace the quality of traditional classroom instruction.

The study also highlights students' growing acceptance of blended learning. A considerable proportion of respondents supported integrating online learning into university curricula, particularly for theoretical subjects. This finding aligns with current trends in higher education, where blended learning is increasingly recognized as a flexible and student-centred approach that combines the strengths of digital technologies with the benefits of face-to-face interaction. Students also identified several practical advantages of online learning. Flexibility, the possibility of combining employment with university studies, and easier access for students living outside urban centres were among the most frequently reported benefits. These findings support previous research suggesting that digital learning environments can improve educational accessibility and promote lifelong learning opportunities. Despite these advantages, respondents consistently emphasized the limitations of online education. The absence of direct communication with instructors, reduced social interaction with classmates, prolonged screen exposure, and the inability to adequately teach practical subjects emerged as the most significant challenges. These findings are consistent with the broader literature, which identifies social interaction, collaboration, and active participation as essential components of effective learning in higher education. An important contribution of this study is the evidence that students no longer perceive online learning as an emergency solution but rather as a valuable educational resource when appropriately integrated into traditional teaching. This finding has practical implications for universities seeking to modernize their curricula through flexible learning models while preserving the quality of practical instruction. Overall, the results suggest that the future of higher education lies not in replacing classroom teaching with online learning, but in developing balanced blended learning models that combine technological innovation with direct academic interaction. Such an approach may enhance students' learning experiences while increasing the flexibility, accessibility, and resilience of higher education systems.

Conclusions and Recommendations

This study examined students' perceptions of online learning before and after the COVID-19 pandemic within the context of higher education in Albania. The findings indicate that students generally recognized online learning as an effective educational solution during the pandemic, particularly for theoretical courses. However, participants emphasized that online instruction cannot fully replace face-to-face teaching, especially in disciplines requiring practical skills, direct interaction, and hands-on experience. The results further demonstrate that students increasingly perceive online learning as a complementary component of higher education rather than as a substitute for traditional classroom instruction. Flexibility, accessibility, and the opportunity to combine employment with academic studies were identified as the main advantages of online learning. Conversely, limited social interaction, reduced communication with instructors, technical challenges, and the inability to effectively deliver practical subjects remain significant concerns. Overall, the findings support the adoption of blended learning approaches that combine the flexibility of digital education with the pedagogical and social benefits of face-to-face teaching. Such an approach may enhance students' learning experiences while promoting greater accessibility and resilience within higher education institutions.

Based on the findings of this study, several recommendations can be proposed for higher education institutions:

Universities should integrate blended learning models that combine online and face-to-face instruction, particularly for theoretical courses.

Practical and laboratory-based subjects should continue to be delivered primarily through in-person teaching to ensure the development of professional competencies.

Universities should invest in digital infrastructure and provide continuous training for academic staff to improve the quality of online teaching.

Greater attention should be given to increasing student engagement, interaction, and collaborative learning within virtual learning environments.

Institutional policies should support flexible learning opportunities for working students and those living in remote areas.

Limitations and Future Research

This study has several limitations. The sample was limited to students from the Sports University of Tirana, which may restrict the generalizability of the findings to other higher education institutions in Albania. Furthermore, the study relied on self-reported perceptions collected through questionnaires. Future research should include larger and more diverse samples from different universities and academic disciplines. Comparative studies examining blended learning, digital competencies,

and the integration of emerging technologies, including artificial intelligence, could provide further insights into the future development of higher education.

References

- [1] Anna Ya Ni (2013). *"Comparing the Effectiveness of Classroom and Online Learning: Teaching Research Methods"*. Journal of Public Affairs Education, JPAE 19(2), 199–215pp
- [2] Allen, E. & Seaman, J (2003). *"Sizing the Opportunity: The Quality and Extent of Online Education in the United States, 2002 and 2003"*, Publisher: The Sloan Consortium, Sloan-C. <https://files.eric.ed.gov/fulltext/ED530060>.
- [3] Darkwa, B.F. & Antwi, S. (2021) *"From Classroom to Online: Comparing the Effectiveness and Student Academic Performance of Classroom Learning and Online Learning"*. Open Access Library Journal, Vol. 8: e7597. 1-18pp
<https://doi.org/10.4236/oalib.1107597>
- [4] Dhull, I. & MS' Sakshi. (2017). *"Online Learning"*. *International Education and Research Journal (IERJ)*, E-ISSN No: 2454-991, Vol. 3, No. 8., 32-33pp
<http://ierj.in/journal/index.php/ierj/article/view/1273>
- [5] Effendi, S. Bhatti, U. Ahmedani, R. Chohan Nadeem, M. Khidri Fatima, F. & Shaikh, W. (2022). *"Comparison Between Online Versus Physical Teaching in the Period of Covid-19. A Comparative Cross Sectional Study"* Research Square,
<https://www.researchsquare.com/article/rs-1303311/v1> DOI:
<https://doi.org/10.21203/rs.3.rs-1303311/v1>
- [6] Požgaj, Ž & Knežević, B. (2007) *"E-Learning: Survey on Student's Opinion"*, Proceedings of the ITI 2007 29th International Conference on Information Technology Interfaces, Cavtat, Croatia, 381-386pp
https://www.researchgate.net/profile/Blazenka-Knezevic/publication/4266153_E-Learning_Survey_on_Students%27_Opinions/links/00b7d522f01e537c9f000000/E-Learning-Survey-on-Students-Opinions.pdf
- [7] Muka, R., Shehu, M. & Vadohej, F. (2020). *"The new perspectives on adapting university syllabus to online teaching platforms. (Case Study)"* at the TEAVET Project, Conference Proceeding Book, ISBN: 978- 84-18490-10-1, Publisher: Servicio de Publicaciones. Universidad de León, Paper ID 23.
https://buleria.unileon.es/bitstream/handle/10612/12995/PUBLISHED_Final%20Conference%20proceeding%20book.pdf?sequence=4&isAllowed=y
- [8] Shehu, M. (2021). *"The Impact of the Pandemic Covid-19 on the Student's Learning Process"* European Journal of Social Science Education and Research, ISSN 2411-9563 (Print) ISSN 2312-8429 (Online) Vol. 8, Issue 3, 97-102p.
https://revistia.com/files/articles/ejser_v8_i3_21/Shehu.pdf

- [9] V. N. Gudivada, R. Agrawal, & C. Chu, (2013). *"Online teaching and learning strategies for programming-intensive courses"*, Proceeding of the 10th International Conference on Information Technology: New Generations (ITNG), 781-782 pp.
https://www.researchgate.net/publication/261162285_Online_Teaching_and_Learning_Strategies_for_Programming-intensive_Courses
- [10] Yu, J.; & Jee, Y. (2021). *"Analysis of Online Classes in Physical Education during the COVID-19 Pandemic"*. Educ. Sci., 11, (1),
3. <https://doi.org/10.3390/educsci11010003>

From Directive to Curriculum: Operationalising Clinical Training, Theory and Student Workload in European Undergraduate Nursing Programmes—A Comparative Scoping Review

Erina Hilaj^{1*}, Agim Kociraj¹, Kleva Shpati², Erda Qorri³, Juventina Ngjela¹

¹Department of Nursing and Physiotherapy, Faculty of Medical Sciences, Albanian University, Tirana, Albania

²Department of Pharmacy, Faculty of Medical Sciences, Albanian University, Tirana, Albania

³Department of Dentistry, Faculty of Medical Sciences, Albanian University, Tirana, Albania

*e.hilaj@albanianuniversity.edu.al

Abstract

Background: European nursing programmes must reconcile the European Union requirement of at least three years and 4,600 hours of education, with no less than one third theoretical and one half clinical training, with the ECTS model of total student workload. How institutions classify classroom teaching, individual study, seminars, skills laboratories and simulation remains insufficiently transparent. Objective: To compare recent European approaches to curriculum structure and identify reported implementation difficulties and responses. Methods: A comparative scoping review and curriculum-document analysis followed JBI guidance and PRISMA-ScR principles. Europe PMC was searched for English-language publications dated January 2021–August 2026, supplemented by citation searching and European regulatory and policy documents. Evidence was charted by programme duration, ECTS, clinical education, theory/contact time, independent study, laboratory or simulation activity, and implementation challenge. Results: The evidence shows persistent variation: programmes range from three years/180 ECTS to four years/240 ECTS, with intermediate 210-ECTS models. Clinical education is commonly presented as approximately half of the programme, but the conversion of hours into ECTS and the treatment of simulation differ. Theory is frequently reported as an aggregate, obscuring the split between classroom contact and individual work. Laboratories may be counted within theory, practice, or a separate category. Recurrent difficulties include fitting 4,600 hours into three academic years, limited placement capacity and mentors, costs and faculty preparation for simulation, and inconsistent national interpretations.

Extending programme duration, protecting clinical placements, separately coding learning modalities and publishing an auditable workload matrix are the most transferable responses. Conclusions: European convergence in outcomes has not produced structural uniformity. Curriculum reform should explicitly map every hour and ECTS credit to learning mode and regulatory category, while preserving clinical exposure and avoiding the substitution of simulation for clinical training without legal authority.

Keywords: nursing education; curriculum reform; ECTS; clinical training; simulation; individual study; Europe; scoping review

1. Introduction

The architecture of undergraduate nursing education in Europe is shaped by two systems that pursue different purposes. Directive 2005/36/EC, as amended by Directive 2013/55/EU, establishes professional minimums: at least three years and 4,600 hours of theoretical and clinical training, with theoretical instruction representing at least one third and clinical training at least one half of the total. The European Credit Transfer and Accumulation System (ECTS), by contrast, expresses the learner's total workload, normally 25–30 hours per credit, including contact teaching, practice, assessment and independent study. A curriculum can therefore appear compliant in ECTS while leaving the regulatory classification of its hours unclear—or appear to exceed the regulated hours because the same learning activity is counted in more than one ledger.

These tensions become concrete during programme redesign. Curriculum groups must decide how many credits and hours belong to clinical placements; whether theory means only direct teaching or also individual study; whether seminars are contact theory; whether skills laboratories and simulation are theoretical, practical or clinical; and whether the programme can realistically deliver 4,600 hours in three academic years. These are not merely technical decisions. They affect student workload, staff deployment, placement agreements, programme cost, quality assurance and the comparability of qualifications.

Recent European reviews demonstrate convergence around competence-based outcomes but persistent diversity in programme length and internal structure. Programmes range from 180 ECTS over three years to 240 ECTS over four years, with 210-ECTS models in several countries. Cross-national studies also show wide ranges in reported theoretical, practical and simulation hours, while single-country curriculum analyses reveal substantial variation between institutions operating under the same national framework.

This review asks: How have European undergraduate nursing programmes operationalised minimum training-duration requirements into ECTS, clinical education, classroom-based theory, individual study and laboratory or simulation activities, and what implementation challenges have been reported? The objectives were to (1) map current structural variants; (2) identify where reporting prevents direct comparison; (3) synthesise difficulties described by curriculum groups and educators; and (4) derive practical principles for curriculum reform in countries aligning programmes with European requirements.

2. Methods

2.1 Design and scope

A comparative scoping review with structured curriculum-document analysis was conducted, informed by JBI guidance and PRISMA-ScR. A scoping design was selected because the evidence comprises comparative studies, national or institutional curriculum analyses, qualitative implementation studies and regulatory documents; the aim was to map interpretations and structures rather than estimate an intervention effect.

2.2 Eligibility criteria

Eligible peer-reviewed sources were published in English from 1 January 2021 to 30 August 2026 and examined pre-registration/undergraduate general nursing education in one or more European countries. A source had to report at least one of the following: programme duration or ECTS; clinical placement hours/credits; theoretical or contact hours; individual workload; laboratory or simulation allocation; or implementation difficulties. Older EU and ECTS documents were retained as governing context. Postgraduate, specialist-only and purely pedagogical intervention studies without curriculum-structure information were excluded.

2.3 Information sources and search

Europe PMC was searched using combinations of nursing education/curriculum, European country terms, ECTS, clinical training/education, simulation, formal structure, harmonisation and legal framework. The search identified 137 records. Targeted citation searching was then used to locate comparative studies and relevant official European documents. Titles and abstracts were screened for structural relevance; full texts were assessed against the eligibility criteria. Because this was a focused comparative map rather than a registered systematic effectiveness review, the synthesis remains descriptive and does not claim exhaustive coverage of every university curriculum.

2.4 Data charting and synthesis

Data were charted into a predefined matrix: country, programme duration, ECTS, reported clinical allocation, theory/contact and independent study, laboratory/simulation classification, and reported implementation challenge. Findings were synthesised at country and issue level. “NR” indicates that the reviewed comparative sources did not report the item consistently; it does not mean the activity is absent. Regulatory requirements were distinguished from programme descriptions, and simulation was not treated as clinical placement unless a source explicitly reported that classification under national authority.

Figure 1. Review protocol and analytical pathway

Stage	Operational decision
1 QUESTION	Translate the EU minimums into comparable curriculum variables.
2 IDENTIFY	Europe PMC (2021–2026) + citation searching + EU/policy documents.
3 SCREEN	Include undergraduate European sources reporting structure or implementation.
4 CHART	Years, ECTS, clinical, contact theory, self-study, labs/simulation, challenges.
5 SYNTHESISE	Country map + cross-cutting problems + transferable curriculum principles.

Note. The workflow is a protocol map. It avoids treating a changeable evidence search as a fixed clinical trial flow and makes the analytical categories auditable.

3. Results

3.1 Programme length and ECTS

The most visible difference is programme length. Austria, Belgium, Croatia, the Czech Republic, France, Italy, Poland and Sweden commonly use three-year/180-ECTS structures; Denmark, Estonia and Finland use 3.5-year/210-ECTS structures; and Bulgaria, Greece, Ireland, Lithuania, the Netherlands, Portugal, Romania and Spain commonly use four-year/240-ECTS structures. Germany shows mixed three- and four-year academic pathways. These groupings are not a quality hierarchy. They show different national solutions to the same professional minimums and create

different amounts of calendar space for regulated hours, academic study and emerging content.

The compression problem is strongest in 180-ECTS programmes. At the standard ECTS workload range, 180 credits represent 4,500–5,400 total hours. The 4,600-hour professional minimum therefore consumes almost the entire lower end of the ECTS workload envelope, even before ambiguity about independent study is resolved. A 210- or 240-ECTS programme offers more room to distribute clinical placements, assessment and self-directed learning across semesters, although it also increases duration and cost.

3.2 Clinical education

Comparative studies commonly describe practice/clinical education as approximately half of the programme, reflecting the Directive. Yet the reporting unit varies—hours, ECTS, weeks or a general percentage—and the term “practical” may combine skills laboratories with direct patient care. This prevents a simple conversion table from being fully reliable. For example, one review reports 60 ECTS of internship in some Italian programmes, while cross-national summaries may describe the practical component more broadly as 50%. Such differences may reflect programme variation, terminology or data extraction rather than true regulatory non-compliance.

3.3 Theory, contact time and individual work

The division requested most often by curriculum teams—classroom theory versus individual study—is the least visible variable in published comparisons. Most sources report an aggregate “theoretical” component or school hours. Under ECTS, however, independent study is part of total workload; under the professional directive, theoretical instruction is defined through education delivered by teachers and other competent persons. National practice may consequently include, exclude or separately record personal work when demonstrating the 4,600 hours. The French policy debate illustrates this workload paradox: personal work supports ECTS but is not automatically accepted as part of the regulated 4,600 hours.

3.4 Laboratories, seminars and simulation

The distinction between seminar and laboratory is pedagogically meaningful but poorly standardised for regulatory reporting. Seminars are generally supervised theoretical contact activities; laboratories and simulation are supervised practical learning without necessarily meeting the Directive’s definition of clinical training, which involves learning in a team and in direct contact with healthy or ill individuals or communities. European simulation studies report no common integration or substitution standard. Some curricula place simulation hours inside theory; others create a separate skills or simulation category. Norwegian curriculum documents

kept simulation distinct from clinical placement hours, while wider European studies identified large institutional variation, cost, space and faculty-development requirements.

3.5 Comparative map

Table 1 uses cautious, source-level categories. It should be read as an evidence map, not a legal compliance audit of countries. “Not separated” is itself a substantive result: published curricula often prevent readers from reconstructing contact theory and independent work.

Table 1. Reported structural adaptations in European undergraduate nursing programmes

Country	Years / ECTS	Clinical/practical reporting	Theory vs self-study	Lab/simulation	Key issue
Austria	3 / 180	Theory-emphasised; practical hours not consistently specified	Independent study not separated	NR	Transparency of practical allocation
Belgium	3 / 180	Clinical internships reported as limited in comparative review	Not separated	NR	Placement volume
Bulgaria	4 / 240	About 50% practical/clinical	Not separated	Not consistently reported	Meeting EU proportions within national plan
Croatia	3 / 180	Approximately half; practical skills reported insufficient in some analyses	Not separated	Skills labs visible but coding varies	Compressed programme; digital/practical skills

Country	Years / ECTS	Clinical/practical reporting	Theory vs self-study	Lab/simulation	Key issue
Czech Republic	3 / 180	About 50%; one review reports 30 weeks	Not separated	NR	Three-year delivery of minimum hours
Denmark	3.5 / 210	90 ECTS practical/clinical	Not separated	Simulation programme-dependent	Balancing academic and placement learning
Estonia	3.5 / 210	Approximately half	Not separated	NR	Social/digital competence visibility
Finland	3.5 / 210	Approximately half	Not separated	Simulation widely used; classification varies	Comparable documentation
France	3 / 180	2,100 clinical/school-reported hours in comparative sources	Personal work treated separately from 4,600-hour requirement	Simulation not a substitute for clinical hours	ECTS workload vs regulated hours
Germany	3–4 / 180–240	Large protected practical component; formal structures vary	Contact/independent work not uniformly published	Simulation implementation varies by provider	Federal variation and academic transition

Country	Years / ECTS	Clinical/practical reporting	Theory vs self-study	Lab/simulation	Key issue
Greece	4 / 240	Approximately half	Not separated	NR	Curriculum harmonisation
Ireland	4 / 240	Approximately half, with substantial placement	Not separated	Simulation institution-specific	Placement capacity and supervision
Italy	3 / 180	Often 60 ECTS internship in sampled universities	Not separated	Variable	High workload in three years; internship variation
Lithuania	4 / 240	Approximately half	Not separated	NR	Specialty and digital competence balance
Netherlands	4 / 240	Substantial practice-integrated model	Not separated	Simulation programme-dependent	Comparability of categories
Poland	3 / 180	High practical/clinical hours; comparative studies show pressure on timetable	Not separated	Labs sometimes included in theoretical education	Fitting regulated hours; mentor capacity
Portugal	4 / 240	Approximately half	Not separated	Simulation variable	Institutional differences despite 4-year model

Country	Years / ECTS	Clinical/practical reporting	Theory vs self-study	Lab/simulation	Key issue
Romania	4 / 240	Approximately half	Not separated	NR	Breadth of specialty exposure
Spain	4 / 240	Substantial clinical component; wide curricular heterogeneity across 60 plans	Not separated	Simulation/ labs vary by university	National standardisation and credit allocation
Sweden	3 / 180	Approximately half	Not separated	Simulation institution-specific	Compressed delivery and category visibility

Sources: Antão et al. (2023, 2025); Dobrowolska et al. (2025); Taneva et al. (2023); Ruiz-Rojo et al. (2022); Knapp and Darmann-Finck (2024); Pedersen et al. (2026). NR = not consistently reported in the reviewed sources.

3.6 Reported implementation difficulties and responses

Across sources, the difficulty was not a lack of educational ideas but the coexistence of incompatible or incomplete accounting categories. The seven recurring issues and practical responses are summarised in Table 2.

Table 2. Curriculum-design difficulties, responses and trade-offs

Issue	Reported interpretation/problem	Adaptation or safeguard	Benefit / limitation
4,600 hours vs ECTS	Regulated hours coexist with 25–30 hours of total workload per ECTS. Three-year/180-ECTS programmes face the greatest timetable pressure.	Extend to 3.5/4 years; publish a dual ECTS–hour matrix; audit overlap and double-counting.	Makes compliance visible; may require policy change and resources.

Issue	Reported interpretation/problem	Adaptation or safeguard	Benefit / limitation
Clinical minimum	At least half of 4,600 hours is clinical under Directive 2005/36/EC; some countries/programmes report credits, others hours or weeks.	Protect placement hours; use placement-capacity planning and formal mentor preparation.	Maintains patient-facing competence; dependent on services and supervisors.
Theory: contact vs individual study	Comparative reports usually aggregate “theory”; independent study is rarely reported separately.	Code lecture, seminar and supervised tutorial separately from self-study and assessment preparation.	Prevents invisible workload; increases administrative detail.
Laboratory vs seminar	Skills laboratories may be placed under theory, practical education or a stand-alone category.	Define each modality by learning activity and supervision, then map it once to regulatory and ECTS categories.	Improves auditability; national definitions may still differ.
Simulation vs clinical education	Simulation supports preparation and assessment, but European practice lacks a common substitution rule.	Use simulation as preparation/integration unless competent authorities explicitly permit replacement; report hours separately.	Safer innovation; does not solve all placement shortages.
Placement capacity and mentors	Post-pandemic shortages, competing cohorts and limited mentor time constrain clinical learning.	Long-term agreements, diversified sites, mentor workload recognition and quality indicators.	Expands capacity; requires funding and service partnership.
Faculty, space and cost	High-fidelity simulation needs trained staff, maintenance, scenarios and protected space.	Shared centres, staged fidelity, faculty development and costed implementation plans.	Improves consistency; initial and recurrent costs remain.

4. Discussion

4.1 Harmonised competence does not mean identical architecture

European policy has produced a shared threshold and competence direction, not a single curriculum blueprint. The existence of 180-, 210- and 240-ECTS routes indicates that duration is a national design choice within a common professional

space. A defensible comparison must therefore distinguish three layers: legal minimums, national implementation and institutional curriculum design. Problems arise when a local curriculum borrows a credit value from one layer and an hour definition from another.

4.2 The central technical problem is the accounting model

Curriculum reform groups need two linked but non-identical ledgers. The ECTS ledger measures total student workload. The professional-training ledger demonstrates regulated theoretical and clinical training. Every activity should appear once in the ECTS ledger and be assigned transparently—where legally justified—to a professional category. A lecture, seminar, skills laboratory, simulation session, clinical placement and independent assignment should not be collapsed into the same “theory” block merely to achieve a target number.

This also clarifies why adding laboratories instead of seminars does not automatically solve a shortage of theoretical hours. A laboratory may improve practical preparation, but if national rules classify it outside theoretical instruction it cannot repair a theory deficit; if it is not direct patient/community learning, it should not silently repair a clinical deficit either. The appropriate solution is first definitional—agree the category and its legal basis—then numerical—allocate hours and credits—and finally pedagogical—select the modality that best achieves the competency.

4.3 Clinical placements and simulation should be complementary

Simulation offers standardised exposure, psychological safety, deliberate practice and assessment of rare events. It is particularly valuable before placements and for integrating theory with clinical judgement. Nonetheless, the reviewed evidence does not support a Europe-wide assumption that simulation hours may replace clinical training. Programmes should publish simulation separately, state whether national authorities permit any substitution, and protect the patient-facing placement minimum. This approach supports innovation without creating an avoidable recognition risk.

4.4 Implications for curriculum reform

For programmes currently reorganising a 180-ECTS nursing degree, the evidence supports an auditable curriculum matrix at module and programme level. Each semester should show ECTS, total workload, classroom lecture, seminar/tutorial, laboratory/simulation, supervised clinical placement, assessment and independent work. The matrix should include separate subtotals for the Directive’s theoretical and clinical minima and should document the legal treatment of simulation. This is particularly important where the national programme also requires a high absolute number of clinical hours within six semesters.

A practical governance sequence is: (1) fix regulatory definitions before distributing credits; (2) calculate the full programme envelope and semester feasibility; (3) protect clinical placements and mentor capacity; (4) map contact theory and independent study separately; (5) distinguish seminars, laboratories and simulation; (6) test student and staff workload; and (7) obtain external legal and professional validation. This sequence reduces the risk that the curriculum is pedagogically attractive but arithmetically or legally inconsistent.

4.5 Proposed minimum reporting standard

Required field	Minimum disclosure
Programme envelope	Years, semesters, total ECTS and total workload hours.
Clinical education	Direct clinical hours, clinical ECTS, settings, supervision and whether simulation is excluded/included.
Theory	Teacher-led lecture, seminar/tutorial and other contact hours, separately.
Individual work	Reading, assignments, preparation and assessment workload.
Laboratory/simulation	Hours, ECTS, fidelity/type, purpose and regulatory category.
Quality safeguards	Placement capacity, mentor ratios/preparation, student workload checks and review cycle.

5. Strengths and Limitations

This review addresses curriculum decisions that are often hidden by aggregate ECTS reporting and triangulates comparative studies with legal and policy sources. Its tables distinguish missing reporting from absence and avoid treating simulation as clinical training by default. Limitations are important. The search was focused rather than database-exhaustive; only English-language sources were included; country-level entries may conceal institutional variation; and several comparative papers rely on publicly available documents that differ in detail and date. The results should therefore guide curriculum analysis and future data collection, not serve as a formal compliance determination.

6. Conclusion

Recent European nursing curricula share a professional destination but reach it through different programme lengths, credit volumes and classifications of learning. The most consequential gaps are the opaque division of theory into classroom and individual work, inconsistent placement of laboratory and simulation hours, and the difficulty of fitting 4,600 regulated hours into a three-year/180-ECTS programme while maintaining a credible workload. The safest reform strategy is not to copy a single country. It is to use a dual, auditable ECTS–regulatory matrix, protect direct clinical learning, report every modality separately and validate the interpretation nationally. Such transparency would improve both curriculum design and European comparability.

Declarations

Funding: No external funding was received for this review.

Conflict of interest: The author declares no conflict of interest.

Ethics approval: Not applicable; the study analyses published literature and public documents.

Data availability: The evidence-charting framework is presented in the manuscript. The full search log should be deposited with the final submitted version.

References

- 1] Antão, C., et al. (2025). Nursing degree curriculum: Differences and similarities between 15 European countries. *Nursing Reports*, 15(3), 112. <https://doi.org/10.3390/nursrep15030112>
- 2] Antão, C., et al. (2023). Nursing curricula in Southern Europe: A scoping review. *Nursing Reports*, 13(4), 1466–1481. <https://doi.org/10.3390/nursrep13040113>
- 3] Chabrera, C., et al. (2021). Simulation in nursing education programs: Findings from eight European institutions. *Clinical Simulation in Nursing*, 59, 62–70. <https://doi.org/10.1016/j.ecns.2021.05.004>
- 4] Chabrera, C., et al. (2024). Simulation-based education in undergraduate nursing programmes in Catalonia and Andorra. *Nursing Research and Practice*, 2024, 1091530. <https://doi.org/10.1155/2024/1091530>
- 5] Dobrowolska, B., et al. (2025). Changes and continuities in nursing education before, during and after the COVID-19 pandemic: A comparative European study. *BMC Medical Education*. <https://doi.org/10.1186/s12909-025-07407-0>
- 6] European Commission. (2015). *ECTS Users' Guide*. Publications Office of the European Union.

- 7] European Parliament and Council. (2005). Directive 2005/36/EC on the recognition of professional qualifications, Article 31. Official Journal of the European Union.
- 8] European Parliament and Council. (2013). Directive 2013/55/EU amending Directive 2005/36/EC. Official Journal of the European Union.
- 9] European Students' Union. (2024). BM86: Nursing sciences—European nursing education and the ECTS workload paradox.
- 10] European Federation of Nurse Educators. (2025). FINE Strategic Plan 2025–2035.
- 11] Knapp, L., & Darmann-Finck, I. (2024). Academic nursing education in Germany: Similarities and differences in formal structure. *Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen*.
<https://doi.org/10.1016/j.zefq.2023.12.006>
- 12] Pedersen, I., et al. (2026). The integration of simulation-based learning in Norwegian bachelor nursing programme documents: A curriculum study. *BMC Nursing*. <https://doi.org/10.1186/s12912-026-04668-y>
- 13] Ruiz-Rojo, H., et al. (2022). Analysis of nursing curricula in Spain: A mixed-methods study of 60 degree programmes. *Nurse Education Today*, 119, 105360. <https://doi.org/10.1016/j.nedt.2022.105360>
- 14] Skela-Savič, B. (2023). European nursing education and the challenge of the 4,600-hour requirement in three-year programmes. [Policy commentary].
- 15] Taneva, N., et al. (2023). Nursing education in selected European Higher Education Area member countries: A comparative analysis. *Iranian Journal of Public Health*, 52(7), 1427–1438.
<https://doi.org/10.18502/ijph.v52i7.13243>
- 16] Tricco, A. C., et al. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467–473. <https://doi.org/10.7326/M18-0850>
- 17] Peters, M. D. J., et al. (2020). Updated methodological guidance for the conduct of scoping reviews. *JBIM Evidence Synthesis*, 18(10), 2119–2126.
<https://doi.org/10.11124/JBIES-20-00167>

Terminological Analysis and Thematic Trajectories in Research Projects at the Facultad de Ciencias Naturales y Museo (Unlp): 2018–2023 Period

Edgardo Alberto Stubbs

Instituto de Investigaciones en Humanidades y Ciencias Sociales. Facultad de Humanidades, UNLP-Conicet

edgstubbs@yahoo.com

Abstract

University research projects constitute a fundamental information resource and a formal manifestation of science accredited within the academic sphere. Because the principal investigators themselves describe these projects thematically in natural language by assigning keywords, the resulting documents provide high-quality qualitative data. Systematic analysis of this material makes it possible to explore the evolution of scientific output and understand the dynamics of knowledge generation within higher education institutions. This study aims to identify and analyze the trajectories and thematic fields represented in research projects accredited by the Universidad Nacional de La Plata (UNLP)—specifically those based at the Facultad de Ciencias Naturales y Museo—during the 2018–2023 period. The study involved collecting indexed terms from the selected projects and conducting an exhaustive analysis of their titles and abstracts. This document processing facilitated vocabulary standardization to create an institutional terminology bank. This tool is designed to establish semantic links between concepts, enabling the identification of shared knowledge clusters, complementarities, and lines of thematic evolution. Seven specific thematic axes were defined for the analysis: Ecology, Zoology, Botany, Paleontology, Geology, Geochemistry, and Anthropology and Archaeology. These axes were subsequently grouped into three broad research areas reflecting the structure of the academic unit in question: Biology, Geology, and Anthropology. A total of 201 research projects were retrieved for this indicative analysis. Its initial chronological distribution shows that 28.9% corresponds to 2018, 18.9% to 2019, 19.4% to 2020, 0.5% to 2021, 4.0% to 2022, and 28.3% to 2023. Through this approach, the study proposes a systematic tool for information management, the preservation of local scientific heritage, and the enhancement of the visibility and retrieval of academic output.

Keywords: Research projects; Document analysis; Terminology banks; Scientific output; Knowledge management.

Relationship between Natality and its Influencing Factors

Sara Eriksen

Abstract

In Albania, there is a decreasing trend of natality compared to previous years, which is related to several factors such as emigration, socio-economic factors, etc. The aim of this study is to evaluate the relationship between age and female natality, as well as analyze socio-economic factors related to them. Methodology: A cross-sectional study was conducted to collect data from the female demographic in the urban areas of Tirana. The questionnaire included 19 questions, and 42 respondents answered the questionnaire. Results: Almost 55% of respondents belonged to the 25-34 age group. The majority of women (86%) were full-time employed, and 74% of respondents had higher education studies. 40% of women had children. For about 45%, employment has postponed childbearing, while for roughly 26%, it has impacted the decreasing the number of children. Career appears to have a significant role for women, with 76% agreeing to different extents that it is a priority in their lives. The most prominent indicator influencing natality rate was economic situation, accounting for 83% of all factors. Discussion: Regarding the age, females 35+ had almost twice the natality rate than the 15-34 age groups. The number of women with no children at all, in the <34 age group, is much higher than 35+ group. However, this does not correspond with women's reported ideal age for childbearing. This discordance between the facts presented and women's desire for children is supported by other findings of this study, such as economic situation as the most frequent reason. Conclusion: Women's natality, according to this study, is low. Factors such as economic situation and career play a crucial role in the delay of women's childbearing. However, the sample size, in the present study is limited, and conclusions cannot be generalized. Further studies are recommended for more accurate conclusion to be drawn.

Keywords: natality, age, childbearing, economic situation, career