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Editorial

This issue of *MLS Inclusion and Society Journal* is structured around a clear and essential common theme: inclusion understood as a multidimensional process that permeates the educational, labor, health, urban, and social spheres, and which demands sustained ethical, pedagogical, institutional, and political responses. The articles in this edition agree that inclusion cannot be limited to normative declarations or well-intentioned discourses, but must translate into concrete practices, adapted strategies, and structural transformations that recognize human diversity in all its expressions.

From different theoretical and methodological perspectives, the articles gathered here address situations of vulnerability linked to disability, gender, language, and social participation, highlighting the need for comprehensive, interdisciplinary, and contextualized approaches. Taken together, these contributions demonstrate that inclusion implies rethinking environments—educational, labor, clinical, and urban—so that they cease to be spaces of exclusion or inequality and become settings of recognition, equity, and social justice.

In the first article, “Pedagogical Strategies for the Inclusion of Autistic Students in Regular Classrooms: A Literature Review,” author Denis Ramón Flores, from the Federal University of Tocantins-UFT (Brazil), analyzes the challenges and opportunities presented by the schooling of students with Autism Spectrum Disorder in mainstream educational settings. Based on a comprehensive review, the study underscores the importance of differentiated pedagogical practices, ongoing professional development for teachers, and collaborative work with families and specialized professionals. It also highlights the value of early diagnosis and raising awareness within the educational community as cornerstones for ensuring an equitable education that respects the uniqueness of each student.

The second article, “Breaking the Silence: Workplace Abuse of Women in Colombia,” addresses a persistent and often overlooked problem in the business world. Its authors, Nicolás Rodríguez Arciniegas, Laura Ximena Salazar Parra, Brigith Adela Moreno Roza, and Johan Nicolás Pérez Abril (Minuto de Dios University Corporation, Bogotá), demonstrate, through an empirical study conducted in Bogotá, multiple forms of workplace violence against women, such as psychological harassment, gender discrimination, and exclusion from opportunities for advancement. The article not only contributes to the diagnosis of this reality but also proposes concrete intervention strategies aimed at building safe, equitable, and violence-free workplaces, emphasizing that eradicating workplace abuse is an ethical and social imperative.

The third paper, “Fluent Aphasia and Bilingualism: Impairment of Comprehension and Expression in Languages,” authored by Fabiola Sobarzo and Rayen Torres (University of Los Lagos, Chile), focuses on the language characteristics of bilingual individuals with fluent aphasia. Through a systematic literature review, the study demonstrates that patterns of linguistic impairment vary according to factors such as dominant language, age of acquisition, and executive control mechanisms. The results highlight the need to adapt assessment tools and rehabilitation strategies, moving beyond monolingual approaches that are insufficient to address the sociolinguistic complexity of these patients.

The fourth article, “Accessible Signage and Augmentative Communication in Public Works for Inclusive Cities and Communicative Literacy,” expands the discussion on inclusion in urban spaces. Based on an analysis of experiences in hospitals, emergency settings, and public works projects, its author, Gabriel Montúfar (University of Panama), shows how accessible signage, the use of pictograms, and the principles of universal design promote the autonomy, safety, and participation of people with different disabilities. The work argues that inclusive cities not only prevent risks but also strengthen the social fabric and promote communicative literacy that benefits all citizens. Finally, Ana Beatriz da Silva Menezes, Amanda Cunha Arantes, Isabely Carolina Ribeiro, Rafaela Dias Da Silva (Anhanguera Faculty of Jacareí, Brazil), and Adriely Fernandes Xavier (University of the Atlantic) in the manuscript “Autism Spectrum Disorder and Cognitive Recovery: Links Between Cognition and Development” explore the relationship between cognitive rigidity and social difficulties in people with ASD, highlighting the potential of cognitive restructuring and social skills training. Using a qualitative approach, the study indicates that combining these strategies can improve flexibility of thought, autonomy, and quality of life, reinforcing the idea that interventions should be tailored to each person's cognitive and communicative characteristics.

Overall, this issue reaffirms the commitment of *MLS Inclusion and Society Journal* to producing critical and applied knowledge that contributes to building more inclusive, equitable, and diversity-aware societies. We invite the academic, professional, and social community to engage with these contributions, with the conviction that inclusion is a collective process that requires reflection, action, and shared responsibility.

Editor-in-Chief

Dra. María Jesús Yolanda Colmenero Ruiz

Pedagogical strategies for the inclusion of autistic students in regular classrooms: a literature review

Estrategias pedagógicas para la inclusión de estudiantes autistas en las aulas regulares: una revisión de la literatura

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ABSTRACT

Keywords:

Inclusion, autism, pedagogical strategies, regular education.

This article examines the growing inclusion of autistic students in regular educational settings, highlighting the challenges and opportunities this process brings to pedagogical practice. The inclusion of these students requires differentiated and adaptive pedagogical practices, due to the difficulties educators face in managing classroom crises and addressing the individual needs of each student. The study emphasizes that all students have the right to be attended to in their uniqueness, requiring schools and educators to adopt an approach centered on respect for diversity. Although challenging, the inclusion of autistic students is presented as beneficial for all involved, fostering a more empathetic understanding of human differences among teachers, peers, and families. The article underscores the importance of the school staff remaining open to continuous learning and emphasizes that early diagnosis of autism is crucial for developing effective pedagogical strategies. Collaborative contact with the student's family and the support of specialized professionals are essential to creating an inclusive environment. Furthermore, raising awareness among school staff and the constant exchange of experiences between teachers are highlighted as key practices for successful inclusion. This research thus contributes to the debate on the need for adaptations and differentiated strategies that promote effective inclusion, ensuring a quality and equitable education for all students.

RESUMEN

Palabras clave:

Inclusión, autismo, estrategias pedagógicas, educación regular.

Este artículo examina la creciente inclusión de estudiantes autistas en entornos de enseñanza convencionales, destacando los desafíos y oportunidades para la práctica pedagógica. La inclusión de estos estudiantes requiere prácticas pedagógicas diferenciadas y adaptativas, debido a las dificultades que tienen los educadores para afrontar las crisis en el aula y las necesidades individuales de cada estudiante. El estudio destaca que todos los estudiantes tienen derecho a que se atienda su singularidad, lo que requiere un enfoque centrado en el respeto a la diversidad. Aunque desafiante, la inclusión de estudiantes autistas se

presenta como beneficiosa para todos los involucrados, ya que promueve una comprensión más empática de las diferencias humanas entre maestros, compañeros y familias. El artículo destaca la importancia de que el personal escolar permanezca abierto al aprendizaje continuo y enfatiza que el diagnóstico temprano del autismo es crucial para desarrollar estrategias pedagógicas efectivas. El contacto colaborativo con la familia del estudiante y el apoyo de profesionales especializados son fundamentales para crear un ambiente inclusivo. Además, la sensibilización del personal escolar y el constante intercambio de experiencias entre docentes se destacan como prácticas fundamentales para una inclusión exitosa. La investigación contribuye así al debate sobre la necesidad de adaptaciones y estrategias diferenciadas que promuevan una inclusión efectiva, garantizando una educación de calidad y equitativa para todos los estudiantes.

Introduction

The inclusion of autistic students in regular classrooms has emerged as a topic of growing relevance in the contemporary educational scenario. As diversity in schools increases, there is an urgent demand for pedagogical practices that not only recognize individual differences, but also address the specific needs of each student. Within this context, the inclusion of students with Autism Spectrum Disorder (ASD) challenges educational systems to adapt and innovate, providing a learning environment that values diversity and promotes the integral development of all students.

Despite significant advances in public policies and practices focused on educational inclusion, many teachers still face substantial challenges in dealing with the inclusion of autistic students. These challenges range from understanding the behavioral, cognitive and social characteristics of ASD to implementing effective teaching strategies that promote participation and learning for these students. In many cases, educators report feeling unprepared or unsupported to handle the specific demands of these students, which can result in merely formal inclusion, without achieving effective and meaningful integration into the school environment.

In addition to the challenges encountered in the pedagogical field, the participation and active involvement of the families of autistic students in the educational process is an aspect that deserves more attention. Several studies have pointed out the importance of school-family collaboration as a crucial factor for the academic and social success of these students. However, educational practice often fails to establish effective mechanisms for communication and collaboration with families, who often play a central role in developing strategies that can be adapted to the school environment. Neglecting this aspect compromises not only the inclusion process, but also the full development potential of students.

This article has as its central objective an in-depth investigation of the characteristics of students on the autism spectrum and the development of inclusive pedagogical practices that are truly effective in responding to their unique needs. To this end, a thorough analysis of the behavioral and cognitive profile of autistic students is proposed, considering aspects such as patterns of social interaction, communication and learning modes. Such an analysis is justified by the need for educators to understand the particularities of these students, so that they can adapt their practices and promote an inclusion that goes beyond mere physical insertion in the classroom.

To achieve this objective, this study sets out to answer two fundamental questions: (1) What are the distinguishing characteristics of autistic students that educators should be aware of to promote effective inclusion? (2) What pedagogical practices have proven most effective in facilitating the inclusion of these students in regular classrooms? By answering these questions, it is hoped to provide theoretical and practical foundations that can guide teachers' actions and contribute to the construction of more welcoming and inclusive educational environments.

The rationale for conducting this study lies in the growing demand for inclusive practices that adequately serve autistic students. In addition, the urgency of actively involving families in this process is emphasized, recognizing that school inclusion is a joint effort, which depends on the collaboration between teachers, students and their families. Thus, by bringing to the debate the importance of understanding ASD and the implementation of differentiated pedagogical practices, this study aims to contribute to the training of educators who are more prepared and sensitized to the needs of these students, as well as to the promotion of an inclusive school culture.

The methodology adopted in this research consists of an exhaustive review of the existing literature on Autism Spectrum Disorder, seeking to identify the essential

characteristics of ASD and its implications in the educational context. This will be followed by a detailed analysis of the crucial role played by teachers in promoting inclusion, considering both the challenges and opportunities that this role represents. Finally, the study will focus on the discussion and evaluation of specific pedagogical practices that have proven to be effective in the inclusion of autistic students in regular classrooms. The intention is to offer a set of pedagogical strategies theoretically grounded and susceptible of practical application, which help educators in the construction of learning environments more inclusive and responsive to the demands of students with ASD.

Thus, this article aims to contribute to the advancement of discussions on school inclusion, highlighting the need for an attentive and committed approach to the singularities of autistic students. It is hoped that the results of this study will not only enrich the field of special education, but also provide valuable guidance for teaching practice in diverse educational settings, promoting a more just and equitable education for all students.

Method

Methodological Approach

This study adopts a bibliographic approach, based on the critical analysis and synthesis of the existing literature on "Teaching and Learning Processes in Basic Education: A Critical View of Current Policies". The choice of this methodology is justified by its ability to provide an in-depth theoretical and conceptual analysis, which allows understanding the complexities inherent to the subject under investigation. According to Gil (2017), bibliographic research is recommended to identify gaps in knowledge, contributing to the construction of a solid foundation to support future research. In this context, the bibliographic approach facilitates the analysis of theoretical, empirical and conceptual aspects, providing a broad and integrated view of educational processes.

Source Selection and Inclusion Criteria

The source selection process for this research was carried out in a rigorous and systematic manner, following sound methodological principles that ensure the relevance and quality of the selected materials. The collection, analysis and interpretation of various bibliographic sources, including books, scientific articles, government reports, educational policy documents and other academic publications, formed the basis for the development of the study. According to Lakatos and Marconi (2010), bibliographic research plays a crucial role in the systematization of scientific knowledge on a specific topic, providing a robust theoretical basis that guides both research and educational practice. In this sense, the careful selection of sources was fundamental to guarantee the validity and reliability of the results obtained.

In the present study, rigorous inclusion criteria were used to ensure that the selected sources were relevant to the research objectives, focused on teaching and learning processes in basic education, as well as on the critical analysis of current educational policies. One of the main inclusion criteria was thematic relevance. Only those studies and publications that directly and deeply addressed the research topics, such as pedagogical processes and educational policies in the context of basic education, were considered. This approach allowed the selection of sources to contribute to a comprehensive understanding of the field, encompassing educational theories as well as practical applications and the impact of policies in school contexts.

Another key criterion was the methodological quality of the selected sources. Priority was given to the inclusion of studies that demonstrated scientific rigor in their methodological approaches, ensuring that the conclusions derived from them were reliable and applicable to the study context. Peer-reviewed publications, research reports with a solid empirical basis and critical analyses by experts in the field of education were considered essential to provide theoretical and empirical soundness to the study. This was done in order to avoid the inclusion of speculative or unscientific material, which could have compromised the validity of the analysis.

The search for relevant materials began with the identification of key words related to the central themes of the research, such as "teaching and learning processes", "educational policies" and "basic education". These keywords served as a starting point to guide the search in recognized academic databases, such as PubMed, Google Scholar, Scopus and university libraries, thus ensuring that the selected sources were current and relevant to the academic field. As Severino (2016) points out, a systematic search is crucial to avoid biases and gaps in the literature review, ensuring the inclusion of up-to-date, diverse and high quality materials.

During the search process, special attention was paid to identifying sources that offered critical and analytical approaches to the topics investigated, with particular emphasis on those that substantially discussed the impact of educational policies on the quality of basic education. This analytical approach allowed not only the collection of information on the current state of educational policies, but also a critical evaluation of them, identifying strengths, weaknesses and areas for improvement. In this way, the selected sources contributed to a thorough and in-depth analysis of the field, providing a solid theoretical basis for the development of the conclusions.

In addition to the thematic relevance and methodological quality, the contemporaneity of the publications was established as an essential criterion for inclusion. According to Fiorin (2019), the selection of recent sources is critical to ensure that the literature review reflects current trends and the most recent debates in the field of basic education. In line with this criterion, priority was given to the inclusion of studies published in the last two decades, which made it possible to address the contemporary challenges of education from an updated perspective. This was especially important given that the educational landscape has undergone significant transformations in recent years, particularly in relation to the implementation of new educational policies and changes in teaching and learning dynamics driven by globalization and new technologies.

Consideration of the date of publication was also relevant to ensure that the study was in tune with the most recent educational discussions and practices. In a field such as education, where pedagogical policies and methodologies are evolving rapidly, it is crucial to have sources that reflect these changes and provide a theoretical framework that responds to contemporary challenges. Therefore, the selection of recent sources made it possible to build a solid and complete theoretical foundation, which not only addresses the classical issues of pedagogy and educational policies, but also integrates the most recent developments in the field.

In conclusion, the source selection process in this study was carried out following rigorous inclusion criteria that ensured the thematic relevance, methodological quality and contemporaneity of the selected publications. These criteria, together with a systematic search in prestigious academic databases, ensured that the sources used provided a robust and updated theoretical framework, providing a solid basis for the critical analysis of teaching and learning processes in basic education and current educational policies.

Bibliographic Review Procedures

The literature review process in this study followed a structured and meticulous sequence, ensuring exhaustive coverage and critical analysis of the selected sources. This rigorous methodological approach allowed not only an adequate synthesis of the literature, but also a critical evaluation of previous theories and findings in the field of basic education and educational policies. The objective was to identify both advances and limitations in existing research, as well as areas requiring further attention.

In the first phase, an exploratory reading of the selected materials was carried out. This preliminary reading was essential to become familiar with the most relevant issues, concepts and theories addressed in the literature reviewed. During this initial stage, priority was given to identifying the predominant theoretical currents and critical perspectives on teaching and learning processes, as well as the implementation of educational policies in basic education. As Severino (2016) points out, critical analysis at this stage is fundamental to understand and evaluate the different points of view present in the scientific production, allowing researchers to position themselves with respect to the theories reviewed.

Subsequently, the materials were subjected to a detailed and in-depth reading, focusing on the most relevant aspects related to the research topic. During this phase, information that provided critical perspectives on pedagogical processes and educational policies was highlighted, emphasizing how these impact the quality and equity of basic education. Convergences and divergences between the different studies were identified, allowing a comparative analysis of the theoretical and methodological positions that dominate the field. This comparative analysis, as suggested by Gil (2017), was crucial to identify patterns, emerging trends and gaps in the literature that have not been sufficiently addressed, thus contributing to a more nuanced and critical understanding of the educational issues investigated.

The comparative analysis also made it possible to explore the tensions and debates in the literature on the effectiveness of educational policies in different contexts. This approach facilitated the identification of areas of consensus among the authors, as well as areas of controversy or contradiction, especially regarding the practical implementation of educational policies in schools and their impact on student outcomes. At this stage, studies that discussed inclusive and student-centered approaches versus those that prioritize more technocratic assessment metrics were highlighted, which allowed establishing a solid basis for further critical analysis of the study.

Once the detailed reading was completed, the data collected were organized and categorized according to the main themes identified during the review. The categorization was based on key areas of research, such as teaching processes, pedagogical practices, educational policies and inclusion strategies. This categorization process followed Bardin's (2016) methodological guidelines for content analysis, ensuring a clear and systematic structuring of the information. The organization of the data into thematic categories allowed a coherent synthesis of the findings and facilitated the identification of emerging themes, as well as the distinction between the most established theories and the most recent and cutting-edge approaches.

The resulting content analysis focused on identifying recurrent arguments, i.e., those elements that appeared consistently in the literature reviewed, which made it possible to pinpoint both aspects that have been extensively studied and those that require further research. We also investigated areas in which the studies reviewed showed discrepancies or contradictory approaches, particularly with regard to the application of uniform educational policies in diverse school contexts. This in-depth analysis also made it possible to identify

emerging themes in educational research, such as the growing interest in inclusive education and the need for policies that are more flexible and adaptable to local realities.

This phase also took into account the impact of historical, social and cultural contexts on the formulation and implementation of educational policies. The literature review allowed us to observe how educational policies have been influenced by political and social changes at different times, which in turn have affected the way in which pedagogical practices are implemented. This historical-critical approach added an additional layer of analysis to the study, providing a richer and more contextualized view of contemporary educational issues.

Data Synthesis and Analysis

Once the detailed analysis of the selected materials was completed, an exhaustive synthesis of the information gathered was made, with the aim of building an integral and coherent vision of the research topic. This process of synthesis, as pointed out by Lakatos and Marconi (2010), is essential in bibliographic research, since it allows the systematic organization of knowledge and the elaboration of a solid theoretical structure that serves as a basis for the analysis and interpretation of data. The synthesis was not limited to a simple compilation of information, but involved the contextualization and organization of key findings, which made it possible to establish connections between different concepts and perspectives addressed in the literature. In this way, a deeper and more critical understanding of the subject under investigation was facilitated, providing a solid basis for the subsequent discussions developed in this study.

The synthesis process consisted of grouping the main findings of the literature reviewed around central themes, such as teaching and learning processes in basic education, current educational policies and their impact on the quality of education. This thematic organization made it possible to build a coherent theoretical framework, where the key concepts were contextualized in terms of the current challenges of education. The organization of the information not only facilitated the understanding of the most relevant aspects discussed in the literature, but also helped to identify recurrent patterns and emerging trends in the educational field. The synthesis, therefore, focused on weaving a critical narrative that would unite the different points of view, evaluations and proposals present in the studies reviewed, allowing for an effective integration of the various perspectives.

Regarding data analysis, a critical interpretation of the information collected was carried out in order to identify patterns, trends and gaps in the existing literature. The analysis was structured around the main themes and concepts that had been previously identified during the literature review, which facilitated a systematic organization of the data. This categorization process was key to developing a deeper and more nuanced analysis, as it allowed us to discern the central arguments and areas of consensus or controversy among the studies reviewed.

The analysis focused especially on identifying recurring themes that appeared consistently in the literature, such as the implications of educational policies on teaching processes and the impact of these policies on educational equity. Identifying these recurring themes was crucial to establish a coherent picture of how the topic has been addressed in the existing literature and how theoretical discussions around it have evolved. The central arguments underpinning the different theoretical perspectives were also explored, allowing for a comparative analysis between divergent approaches, helping to point out the main differences and similarities between the theories and empirical studies reviewed.

In addition, areas of consensus or controversy in the literature were investigated, resulting in the identification of key aspects on which studies converge, as well as those on

which there is greater discordance. For example, while some studies highlight the need for more inclusive and student-centered educational policies, others emphasize the importance of maintaining certain standardized parameters to guarantee equity in the evaluation of academic performance. These areas of consensus and controversy were fundamental to understanding the most relevant debates in the field of educational policies and their impact on teaching and learning.

Another relevant aspect of the analysis was the identification of gaps in the literature, i.e., those topics or areas that have been insufficiently investigated or that present limitations in existing studies. According to Minayo (2017), the identification of gaps in knowledge is crucial to justify the need for new studies and guide future research in the area. In the context of this study, the gaps detected centered on the lack of empirical research that addresses the impact of educational policies from a more comprehensive perspective, which contemplates both quantitative aspects (such as standardized test results) and qualitative aspects (such as the emotional and social well-being of students). These gaps point to the importance of developing studies that not only focus on the evaluation of academic performance, but also explore how educational policies influence students' integral development, socioemotional skills and critical capacity.

Methodological limitations were also identified in some of the studies reviewed, particularly those that focused exclusively on the analysis of quantitative data without considering the social and cultural contexts in which educational policies are implemented. These limitations open a space for future research that adopts mixed methodological approaches, combining both quantitative and qualitative data, to provide a more complete and nuanced view of the effects of educational policies on teaching and learning processes.

Ethical Considerations and Limitations

Ethical rigor was a priority at every stage of this bibliographic research, in order to ensure the integrity and scientific accountability of the process. In accordance with the ethical principles established by Severino (2016) and Lakatos and Marconi (2010), proper practices were ensured in the use and handling of sources, respecting copyright and avoiding any form of plagiarism. Special attention was paid to the correct attribution of ideas and concepts to the original authors, so that each source cited in the study was accurately acknowledged. All references were managed according to APA standards (7th edition), which ensures proper attribution of credit to the researchers whose work was consulted and cited. This ethical commitment ensures that the knowledge generated in this research is built on a legitimate basis, respecting intellectual property rights and promoting trust in the academic community.

In addition to credit attribution, the research observed ethical guidelines regarding responsible access and use of materials available in academic databases and digital libraries. In this sense, only academic literature from authorized and reliable sources was used, ensuring that the information reviewed came from legally published academic and scientific studies, which contributes to the transparency and validity of the study. This is essential in bibliographic research, since the integrity of the results depends to a large extent on the veracity and reliability of the sources used.

Despite compliance with ethical standards, bibliographic research has limitations inherent to its methodology. One of the main limitations is related to publication bias, a well-documented phenomenon in scientific research. According to Souza (2017), studies reporting positive results have a higher probability of being published in academic journals, which may generate an underrepresentation of studies with negative or neutral results in the literature. This may bias the overall view of the field of study, as less favorable or contradictory results

are not always equally available or accessible. Consequently, the findings of this research could be influenced by this trend, which limits the diversity of perspectives and approaches within the literature review.

Another critical limitation of this type of research is the dependence on the literature accessible at the time of the review, which may restrict the scope of the study. Gil (2017) highlights that bibliographic research is subject to limitations related to time, language and access to certain databases. In this study, these restrictions may have led to the exclusion of potentially relevant studies, especially those that were not available in the researcher's working languages or that required access to specialized databases outside the institutional scope. Although considerable effort was made to access diverse and up-to-date sources, it is possible that some important studies were not included due to these limitations.

In addition to these limitations, the possible impact of the researcher's assumptions and perspectives on the interpretation of the data collected must be considered. Although an objective and unbiased approach was adopted in the literature analysis, following the recommendations of Bardin (2016) to maintain neutrality in interpretation, subjectivity in the evaluation of sources is unavoidable. The researcher, in his review and analysis process, selects and prioritizes certain studies and perspectives based on theoretical, methodological or practical criteria, which may influence the way in which the results are presented. Although conscious efforts were made to minimize this bias, the researcher's conceptual framework and understanding of the subject may have influenced how the findings were interpreted.

Another aspect to be considered is that, as this was a purely bibliographic research, no primary data or direct observations were included that could complement the findings obtained from the literature review. This limits the study's ability to offer a more empirical or experiential perspective on the issues investigated. Although the literature review provides a solid basis for understanding the state of knowledge in the field, the absence of primary data means that the results and interpretations must be considered within the theoretical and conceptual context provided by the sources reviewed.

Therefore, the results and interpretations presented in this study should be understood in the context of these limitations, recognizing the need for future research that can address the gaps identified in the literature and confirm or expand the findings through empirical studies. The literature review provides a critical starting point for understanding educational policies and teaching and learning processes in basic education, but the next necessary step is to conduct empirical research to verify the theories and proposals discussed in this study, applying methodological approaches that include both qualitative and quantitative data.

In conclusion, this study has maintained a firm commitment to ethical rigor at all stages, ensuring the proper use of sources and respect for copyrights. However, it is essential to bear in mind the limitations inherent in the nature of bibliographic research, which include publication bias, restrictions on access to certain sources, and the inevitable influence of the researcher in the interpretation of the data. These limitations underscore the importance of future research that delves deeper into the issues discussed in this paper by incorporating empirical data and expanding the scope of the literature reviewed.

Results

The results of this research reveal that current educational policies have a profound and direct impact on teaching and learning processes in basic education. However, one of the main shortcomings identified in these policies is their excessively generalized approach, which

prevents adequate consideration of the particularities and specific needs of the various school communities. This lack of specificity creates a significant dissociation between the normative guidelines established by public policies and the practices actually carried out in educational settings. According to Santos (2018), this mismatch between policy formulation and implementation critically affects the effectiveness of such policies by not adequately reflecting the complexity of real school contexts. As a consequence, this disconnect between educational theory and practice can exacerbate pre-existing challenges in institutions, limiting their ability to adapt to the changing realities of their students and contexts.

One of the most relevant findings emerging from this research is the tendency to prioritize quantitative metrics, such as standardized test scores, as the predominant indicators of educational success. This orientation has resulted in limiting the adoption of more innovative, creative and, above all, inclusive pedagogical approaches. Souza (2019) argues that the preponderance of numerical results tends to devalue pedagogical strategies that seek to address the individual differences of students, relegating their diverse needs to the background. This study reveals that, by focusing almost exclusively on measurable indicators, current educational policies restrict the adoption of approaches that promote comprehensive education. This technocratic approach not only compromises the equity of the educational process by imposing a homogeneous and limited vision of school success, but also restricts the ability of teachers to implement pedagogical practices that recognize the diversity inherent in the classroom.

This predominance of evaluation metrics based on quantifiable academic performance also translates into a devaluation of key aspects of students' integral development, such as emotional and social well-being, crucial factors for an effective and equitable teaching-learning process. These types of technocratic policies, by focusing on the evaluation of homogeneous results, minimize the importance of diversity-sensitive pedagogies, which can have negative repercussions not only on students' academic performance, but also on their emotional and social well-being. This finding is of particular relevance in contexts where classroom heterogeneity is significant and the implementation of more flexible pedagogical approaches is essential to ensure the educational success of all students, regardless of their background or needs.

Another central aspect identified in the results of this research is the critical deficit of resources and institutional support necessary for the effective implementation of inclusive policies. Despite the intentions expressed in the regulatory frameworks, educational institutions face numerous obstacles due to insufficient funding, lack of continuous training for teachers and lack of specialized support. Severino (2016) argues that for inclusive policies to have a tangible and lasting impact, it is essential for institutions to have adequate infrastructure, sustained funding, and ongoing training opportunities for educational professionals. The absence of these essential elements not only hinders the effective implementation of policies, but also perpetuates the structural inequalities that have historically affected the education system. Thus, inclusive policies, although formulated with good intentions, lack the resources and support needed to translate into concrete and effective pedagogical practices in school settings.

In addition, the research points to significant gaps in the design of educational policies, especially with regard to the flexibility needed to adapt to changing classroom realities. Taylor (2018) stresses that many current educational policies are too rigid and do not allow for the adoption of pedagogical practices that effectively respond to the dynamic needs of students. This regulatory rigidity not only obstructs educational innovation, but also prevents policies from adjusting to the specific local contexts of each school community. The results of this study

reinforce the urgent need to review educational policies from a more flexible and student-centered perspective. This implies not only a modification of the policies themselves, but also a change in the way educational institutions and teachers conceive their implementation, promoting a more equitable education adjusted to the diversity of students' experiences and ways of learning. Brown (2020) also argues that any effective education policy must incorporate a holistic view that addresses both the academic aspects and the emotional, social and cultural components of student development, elements that are currently severely neglected in current policies.

Comparing these results with previous research, such as that conducted by Taylor (2018) and Brown (2020), confirms that the structural limitations of current educational policies are a significant obstacle to the improvement of educational quality. However, this study broadens the discussion by providing a more detailed and comprehensive view of the challenges faced by institutions in attempting to implement these policies in specific school settings. While previous studies have focused on isolated aspects of policy impact, this paper presents a broader and more integrative perspective, combining different theoretical and methodological approaches. This broadening of the debate contributes significantly to a better understanding of the complexities inherent in the education system and the challenges that must be addressed to improve the quality and equity of education.

Finally, the results of this research underscore the need for substantial reform in educational policymaking. This reform should prioritize collaborative and participatory approaches that actively involve all stakeholders in the school environment, including teachers, students, families and community leaders. Creating more inclusive and adaptive policies requires the incorporation of multiple voices and experiences, which would ensure that guidelines are more sensitive to the particularities of each educational context. In addition, it is recommended that future research focus on empirically exploring the actual effects of these policies on teaching and learning processes. The development of evidence-based educational policies will identify the most effective strategies to ensure inclusive, equitable and high quality education that values and promotes the diversity present in the classroom. This will contribute not only to improving educational equity, but also to enriching the overall learning experience of all students, laying the groundwork for a more equitable education adapted to the needs of the 21st century.

Discussion and Conclusions

The discussion and conclusions derived from the literature review conducted in this study allow for a broad and deep reflection on the teaching and learning processes in basic education, as well as on the significant impact that current educational policies have on these processes. The evidence presented shows that, although these policies pursue the objective of improving academic performance and providing quality education, they face structural deficiencies that compromise their effective implementation. The results reveal both important advances and persistent challenges, underscoring the urgent need for a comprehensive reformulation of educational policies, oriented towards more inclusive, flexible approaches adapted to the diversity of school communities.

One of the most significant findings of this research has been the evident disconnection between standardized educational policies and the specificities and needs present in the various school communities. As Santos (2018) had already pointed out, policies designed from a universal approach tend to homogenize the educational landscape, ignoring the contextual and cultural particularities of different regions and schools. This lack of sensitivity to diversity

results in ineffective implementation of the guidelines, affecting both the quality of education and the overall well-being of students. The mismatch between general policies and school reality not only hinders pedagogical adaptation to the specific characteristics of students, but also creates a gap between normative expectations and practical implementation, which negatively impacts both academic performance and the emotional and social development of students.

This study has highlighted the importance of adapting educational policies to local and contextual realities, recognizing that school diversity is a key element for the success of any educational system. Policies that are more tailored to the particular needs of each school and community would allow not only for an improvement in the academic development of students, but also for a more equitable education that values individual differences and offers fair opportunities for all. Without this consideration of diversity, education becomes a rigid and non-inclusive system that perpetuates existing inequalities.

Likewise, research has identified an excessive prioritization of quantitative indicators such as standardized test results, which has led to a reductionist view of educational success. Souza (2019) points out that this technocratic tendency towards quantification limits the adoption of student-centered pedagogical approaches, devaluing the importance of integral development. Policies that focus solely on measuring academic performance, without taking into account emotional, social and cultural factors, ignore essential aspects of the learning process. This perspective, by focusing exclusively on numerical results, hinders educational innovation and limits the implementation of more inclusive pedagogical strategies that effectively respond to the diversity of needs present in the classroom.

This technocratic approach not only compromises the equity of the educational process by imposing a homogeneous vision of school success, but also restricts the possibilities for teachers to implement diversity-sensitive pedagogical practices. The research highlights that this approach is not sufficient to prepare students for the complex challenges of the contemporary world, in which academic success cannot be disconnected from the social-emotional competencies, critical skills and ethical values that must be fostered in schools. Students are not mere recipients of academic information, but individuals who require a holistic approach that considers their development in all dimensions.

Another key point that emerges from the results is the lack of adequate resources and the scarce institutional support necessary for the effective implementation of inclusive policies. Despite the good intentions of educational policies, many institutions face insurmountable barriers, such as insufficient funding, lack of continuous training for teachers and the absence of specialized support. Severino (2016) posits that, for inclusive policies to have a real impact, it is essential that schools have adequate material, financial and human resources. The deficit in these resources prevents policy guidelines from being translated into concrete actions in the classroom, perpetuating the structural inequalities that already affect the education system. This lack of resources, coupled with the lack of continuous training for teachers, aggravates the situation and reinforces the barriers faced by the most vulnerable groups, limiting opportunities for equitable and quality education.

Another crucial aspect highlighted by this study is the rigidity of current educational policies. Taylor (2018) highlights that inflexible and unadaptable policies represent a significant barrier to the adoption of more inclusive and diversified pedagogical practices. Regulatory rigidity prevents educational institutions and teachers from adjusting their pedagogical approaches to the changing realities of students and school contexts. Instead of allowing for innovation and pedagogical experimentation, these policies restrict the possibilities for transformation, perpetuating standardized approaches that do not respond to

the specific needs of students. This lack of flexibility, as the study indicates, not only limits the capacity of institutions to offer an education adapted to the particularities of each community, but also deepens existing educational gaps.

In line with Brown (2020), the results underscore the need for educational policies to adopt a more holistic approach, which is not limited to academics alone, but also considers the emotional, social and cultural well-being of students. Learning cannot be seen as a one-dimensional process that focuses exclusively on the acquisition of knowledge. Students are whole beings who need an educational approach that fosters their full development. Educational policies must therefore promote a broader vision of learning that prepares students not only to perform in exams, but also to face the complex challenges of the 21st century in a critical, ethical and balanced manner.

This study, in comparison to previous research such as Taylor (2018) and Brown (2020), contributes to a more integrated and comprehensive understanding of the challenges facing education policy in basic education. While previous studies focused on specific aspects of the policies, this work provides a holistic view, analyzing both the impact on pedagogical processes and on the integral development of students. The identification of key areas for improvement, such as the need for greater policy flexibility and increased resource allocation, provides a solid basis for the formulation of more student-centered educational policies that respond effectively to the diversity of educational contexts.

Despite the breadth of the analysis performed, it is important to recognize certain limitations inherent to the methodology employed. As Souza (2017) points out, publication bias may have influenced the results, given that studies with positive results are usually more likely to be published. Likewise, the literature review was limited to the literature available at the time of the research, which may have excluded relevant studies for reasons of access, language or time, as noted by Gil (2017). In addition, the exclusive reliance on secondary sources limits the possibility of conducting a more in-depth analysis based on the direct experience of the actors involved in the educational processes.

Therefore, it is recommended that future research address these gaps through empirical studies that examine the actual impacts of educational policies in various school contexts. Empirical research would provide a more accurate understanding of how policies affect both students and teachers in their daily practice. Likewise, it would be pertinent to explore the development of alternative policies that prioritize more comprehensive pedagogical approaches, adjusted to the individual needs of students and designed based on the active participation of all stakeholders in the school environment. Johnson and Johnson (2012) suggest that a participatory approach is key to ensuring that education policies promote fair and equitable education.

In conclusion, the findings of this research not only underscore the need for a critical review of current educational policies, but also provide a theoretical and practical framework for moving towards a more inclusive, equitable and quality education. The formulation of policies that value and promote diversity is essential to ensure that all students, regardless of their socioeconomic or cultural background, have access to an education that fosters their integral development and enables them to reach their full potential.

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BREAKING THE SILENCE: WORKPLACE ABUSE AGAINST WOMEN IN COLOMBIA

Rompiendo el silencio: Maltrato laboral hacia la mujer en Colombia

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ABSTRACT

Keywords:

Workplace abuse, women, gender-based violence, work environment, mental health, equity.

Workplace mistreatment of women has become one of the most persistent and normalized forms of structural violence within the Colombian corporate environment. This article presents the findings of a study conducted in a specific business setting in the city of Bogotá, aimed at identifying, characterizing, and proposing intervention strategies to address this issue.

Through the application of information-gathering tools on a representative sample of female workers from various sectors, and using comparative data analysis, the study reveals multiple forms of workplace mistreatment. These include psychological harassment, gender discrimination, work overload, the invisibilization of achievements, and exclusion from promotion opportunities. Such forms of violence directly affect women's dignity, mental health, and productivity, perpetuating conditions of inequality and vulnerability in the workplace.

The study's findings indicate a high prevalence of workplace mistreatment of women in the analyzed contexts, highlighting the urgent need to design and implement clear institutional policies against harassment and gender-based violence. Proposed strategies include the creation of effective reporting and sanctioning mechanisms, gender-sensitive training programs -especially for managerial and leadership personnel- wage audits to promote economic equity, and the strengthening of psychosocial and legal support services for victims.

This article seeks to contribute to the understanding of workplace violence dynamics faced by women in Colombia and proposes concrete actions to transform workplaces into safe, equitable, and respectful environments. Eradicating workplace mistreatment is not only a matter of social justice but also a fundamental condition for the ethical and sustainable development of organizations and society as a whole.

RESUMEN

Palabras clave:

maltrato laboral, mujeres, violencia de género, entorno laboral, salud mental, equidad.

El maltrato laboral hacia la mujer se ha convertido en una de las formas más persistentes y normalizadas de violencia estructural dentro del entorno empresarial colombiano. Este artículo recopila los resultados de la investigación desarrollada en un determinado entorno empresarial de la ciudad de Bogotá, con el objetivo de identificar, caracterizar y proponer estrategias de intervención frente a esta problemática, a través de la aplicación de instrumentos de recolección de información en una muestra representativa de trabajadoras en distintos sectores, mediante el análisis comparativo de datos, donde se evidencian múltiples manifestaciones de maltrato laboral, tales como el acoso psicológico, la discriminación de género, la sobrecarga de tareas, la invisibilización de logros y la exclusión de oportunidades de ascenso. Estas formas de violencia impactan directamente en la dignidad, la salud mental y la productividad de las mujeres, perpetuando condiciones de desigualdad y vulnerabilidad en el ámbito laboral.

Los hallazgos del estudio revelan una alta prevalencia de maltrato laboral hacia las mujeres en los contextos analizados, lo que pone en evidencia la necesidad urgente de diseñar e implementar políticas institucionales claras contra el acoso y la violencia de género. Entre las estrategias propuestas se incluyen la creación de rutas efectivas de denuncia y sanción, programas de capacitación con enfoque de género dirigidos especialmente a personal directivo y de jefatura, auditorías salariales que promuevan la equidad económica y el fortalecimiento de servicios de acompañamiento psicosocial y jurídico para las víctimas.

Este artículo busca aportar al entendimiento de las dinámicas de violencia laboral que enfrentan las mujeres en Colombia y propone acciones concretas para la transformación de los entornos laborales en espacios seguros, equitativos y respetuosos. Erradicar el maltrato laboral no solo constituye un imperativo de justicia social, sino también una condición indispensable para el desarrollo ético y sostenible de las organizaciones y de la sociedad en su conjunt.

Introduction

Abuse of women in the workplace is a structural problem that transcends the boundaries of organizational spaces, affecting not only the workers directly involved, but also the social and economic fabric of the countries where these dynamics of inequality persist. In the Colombian case, this situation manifests itself in various forms of symbolic and material violence, which are deeply rooted in cultural practices, power hierarchies and traditional gender schemes that still permeate many work environments. Despite legislative advances in gender equity and labor rights, many women continue to be victims of harassment, discrimination, exclusion from leadership opportunities and micromachismos that deteriorate their quality of life, reducing their possibilities for professional development and generating long-term psychosocial consequences (Jiménez Solarte & Zurita Patrón, n.d.).

The persistence of mistreatment of women in the workplace can be interpreted as a reflection of the structural gaps that still exist in the world of work, especially in contexts where informality, precarious employment and the weak implementation of equality policies prevent the full exercise of labor rights. In Colombia, this phenomenon is aggravated by the lack of effective institutional mechanisms for prevention, attention and punishment of these practices (Ministry of Justice and Law, n.d.), as well as by the lack of visibility of the experiences of women workers in different economic sectors. The situation becomes even more critical when it comes to young women, with temporary contracts or in the early stages of their professional lives, who face greater barriers to reporting for fear of reprisals or because of the naturalization of violent behavior disguised as “cultural norms” within the organizational environment.

Several national and international studies have shown that labor abuse practices not only violate the individual rights of female workers, but also have a negative impact on the work environment, business productivity, turnover levels and organizational cohesion (Friedrich Ebert Stiftung Foundation, 2022). Furthermore, a strong relationship has been identified between these dynamics and the deterioration of physical and mental health, increased absenteeism and decreased motivation, which is not only an ethical problem, but also an economic and social one. However, there is still a significant lack of studies that analyze this phenomenon in depth from the current Colombian context, especially with empirical data that allow us to understand its complexity and propose contextualized intervention strategies.

Within this framework, this article arises as an academic response to the need to make visible and analyze labor mistreatment of women from a critical, intersectional perspective, with emphasis on the national reality. Labor mistreatment has been recognized as a form of structural violence that violates the fundamental rights of women in the Colombian business environment (Unidad para la Atención y Reparación Integral a las Víctimas, 2019). The research was developed by the research group of the Corporación Universitaria Minuto de Dios - UNIMINUTO, and focused on the experience of female workers in service sector companies in the city of Bogotá, also including the view of university students as future actors in the labor market. The main objective was to identify the most common forms of mistreatment of women in the workplace, to investigate their underlying causes and to propose institutional strategies aimed at building fairer, more respectful and inclusive workplaces.

This study, of a mixed nature, combines quantitative data with qualitative analysis to offer a broad and in-depth look at the phenomenon. Through structured surveys, semi-structured interviews and discussion spaces, we were able to capture both the frequency of these practices and their subjective, emotional and symbolic dimension. The results are expected to provide significant inputs for the formulation of organizational policies with a gender perspective, strengthen institutional capacities to respond to labor mistreatment and contribute to the cultural change necessary to achieve true equity in the world of work in Colombia.

Method

The research adopted a mixed methodological approach, which made it possible to combine quantitative and qualitative tools, in order to obtain a deeper understanding of the manifestations of labor abuse and possible strategies for its prevention and eradication. In the quantitative phase, a data collection instrument was designed and applied in the form of a structured survey, developed by the members of the seedbed. This instrument was applied to a purposive sample of female workers in the service sector, specifically in call centers. A total of 102 working women between the ages of 20 and 38, with an average length of service between 1 and 3 years, participated in the study. This sample made it possible to identify recurrent patterns of mistreatment, such as gender discrimination, micromachismos, and psychological harassment behaviors.

Additionally, the scope of the study was expanded to include a second sample from another company in the same sector, where approximately 60 people -both men and women- participated in the data collection, with ages ranging from 20 to 45 years old. This age diversity made it possible to contrast perceptions and experiences about work and gender dynamics within the organizational environment.

On the other hand, the perspective of university students was incorporated through semi-structured interviews and discussion forums. Most of these students had an average age of 24 years, and their contributions were fundamental to understand how they perceive labor mistreatment from an early stage of insertion in the labor market, as well as their expectations regarding equitable treatment in the professional environment.

Finally, the qualitative component included the content analysis of the discourses obtained through the interviews and open-ended questionnaires. This stage made it possible to identify emerging categories such as the fear of reporting, the naturalization of symbolic violence and the lack of effective internal policies to prevent workplace abuse. Based on these findings, recommendations were made to strengthen organizational practices, foster a culture of respect and equity, and promote more inclusive and safe work environments for women.

Results

This research, focused on analyzing the different forms of labor mistreatment of women in the Colombian context, had as its central purpose not only to quantify the incidence of these practices in real work environments, but also to understand their most frequent manifestations, their normalization and the institutional gaps that allow their perpetuation. For this purpose, empirical data were collected in three different contexts: a multinational company in the call center services sector, a courier and logistics company and an academic institution (UNIMINUTO). Through surveys applied to students, results were obtained that allow us to draw a revealing picture of the current state of labor mistreatment of women in Colombia.

To meet this objective, a descriptive quantitative methodology was designed, based on the collection of empirical data through structured surveys, which were applied to women directly or indirectly linked to the company.

The inclusion of these three sectors responds to the intention of capturing the diversity of women's work experiences in different organizational dynamics, hierarchical levels and institutional cultures.

In the case of the academic institution, we surveyed female university students who have had or have had work experiences in different environments, also inquiring about their positions, their ages and the consequences that this has brought to their work environment, which allowed us to enrich the analysis with testimonies covering multiple economic sectors. The results obtained reveal common patterns of mistreatment ranging from verbal harassment and subtle discrimination to exclusion from opportunities and devaluation of female capabilities. This approach allows us to draw a revealing picture of the current state of labor mistreatment

of women in Colombia, highlighting the urgent need for transformation in organizational environments.

The results of the application of the data collection tools are presented below.

Figure 1

Applied instrument business sector 1

Mistreatment or harassment they have experienced

¿Qué tipo de maltrato o acoso ha experimentado o presenciado? (Puede seleccionar más de una opción)

121 respuestas

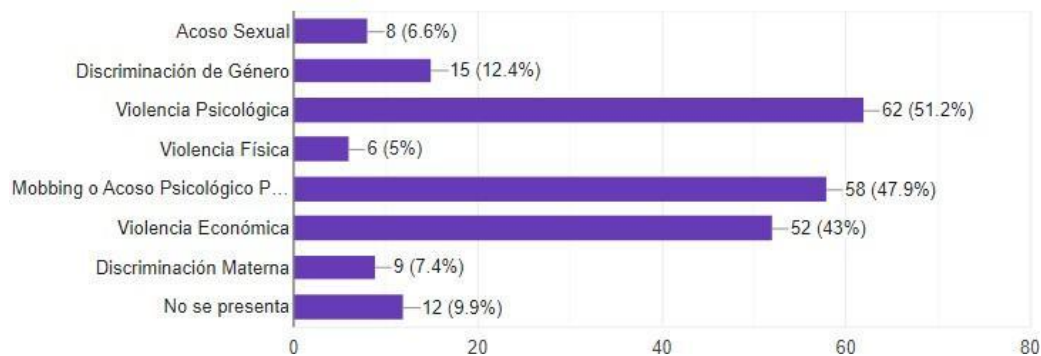


Table 1

Mistreatment or harassment they have experienced

Response options	Response number	Percentage
Sexual Harassment	8	6.6%
Gender Discrimination	15	12.4%
Psychological Violence	62	51.2%
Physical Violence	6	5%
Mobbing or Prolonged Psychological Harassment	58	47.9%
Economic Violence	52	43%
Maternal Discrimination	9	7.4%
Not presented	12	9.9%
Total	121	183,4%

The company, known for its high hiring of young personnel in customer service and call center areas, was one of the most revealing scenarios of the research. According to the data collected, 121 people were surveyed, of whom a significant proportion reported having experienced or witnessed different types of labor mistreatment.

The results indicate that psychological violence is the most common form of abuse, reported by 51.2% of the participants. This form of violence is manifested in behaviors such as humiliation, disqualifications, emotional harassment, unjustified overloading of tasks or systematic invalidation of the work performed. The fact that more than half of the respondents have been

victims of this type of aggression is evidence of a structural problem in the organizational culture, where hierarchical relationships may be marked by the abuse of power.

Prolonged mobbing or psychological harassment was reported by 47.9% of respondents. This result is particularly worrisome, since mobbing not only implies episodic mistreatment, but also a systematic strategy of exclusion or attrition of a person, which usually results in severe effects on their mental health and job stability. The frequency of this phenomenon suggests a toxic organizational climate, where harassment actions are not addressed or are even covered up by the hierarchical systems themselves.

In third place, economic violence was reported by 43% of respondents. This category includes situations such as the assignment of unpaid workloads, denial of salary increases due to gender, precariousness in contracts or indirect economic punishments (such as the exclusion of bonuses). This form of violence, often invisible, represents one of the most common forms of structural discrimination against women, especially in sectors such as services, where labor ties are often weak and opportunities for advancement are limited.

Other forms of mistreatment were also present in the results, although to a lesser extent: gender discrimination (12.4%), sexual harassment (6.6%), maternal discrimination (7.4%) and physical violence (5%). It is striking that only 9.9% of the participants stated that they had not experienced any type of mistreatment, which reinforces the hypothesis that harassment and violence are widely normalized in these environments.

These results reflect the urgency of implementing clear reporting protocols, confidential channels of attention and training in gender perspective for managers and collaborators. They also reveal the need to promote a profound change in organizational culture, moving from a logic of extreme productivity to one that places the dignity and well-being of workers at the center.

Figure 2

Applied instrument business sector 1

¿Cómo ha impactado el maltrato o acoso su desempeño y productividad laboral?

121 respuestas

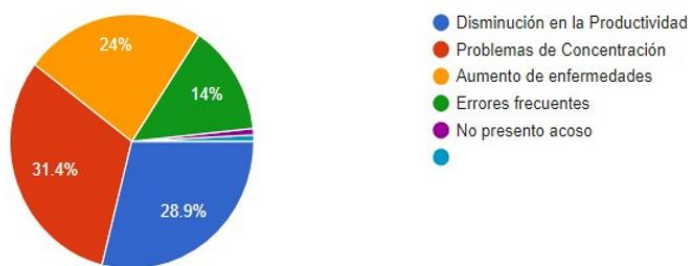


Table 2

Labor impact

Response options	Response number	Percentage
Decrease in productivity	35	28.9%
Concentration problems	38	31.4%
Increase in diseases	29	24.0%
Frequent errors	17	14.0%
No harassment	2	1.7%

Total	121	100%
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The results obtained in Table 2 show the significant impact that workplace mistreatment has on women workers in different organizational contexts. Of the 121 responses analyzed, 31.4% of the participants reported having experienced concentration problems, which indicates a direct impact on their cognitive capacity, attention and daily performance. This situation has repercussions on decision making, task fulfillment and the quality of the work performed, essential factors for individual and collective productivity.

Secondly, 28.9% reported a decrease in productivity, which reflects a deterioration in motivation, commitment to the organization and sense of belonging. This drop in work performance is often associated with constant emotional exhaustion, a hostile environment and lack of recognition, elements that characterize work environments where harassment or gender discrimination is prevalent.

Twenty-four percent reported an increase in illnesses, which shows that workplace abuse not only has emotional but also physical consequences. Workers may develop symptoms such as headaches, sleep disorders, digestive disorders and psychosomatic illnesses, resulting from chronic stress and the continuous tension in the work environment. This relationship between mistreatment and health has been widely documented in the literature, and constitutes a warning about the risks associated with the naturalization of these practices.

On the other hand, 14% of the respondents mentioned the presence of frequent errors in the performance of their duties. This result can be understood as a direct consequence of the loss of concentration, the constant fear of retaliation or criticism, and the accumulated emotional burden, which compromises the efficiency of daily work.

It is especially noteworthy that only 1.7% stated that they had not experienced harassment or the consequences of harassment, which suggests an alarming prevalence of workplace mistreatment among the women surveyed. This data reinforces the hypothesis that harassment at work is not an isolated event, but a structural and widely normalized phenomenon in certain productive sectors.

Figure 3

Applied instrument business sector 2

¿Qué tipo de maltrato o acoso ha experimentado o presenciado? (Puede seleccionar más de una opción)

58 responses

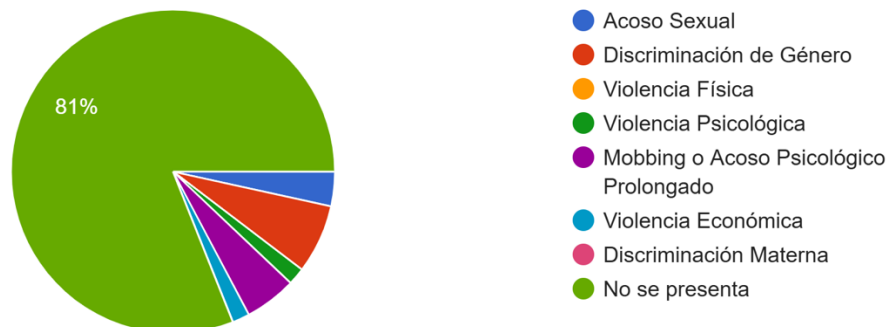


Table 3
Mistreatment or harassment they have experienced

Response options	Number of responses	Percentage
Sexual Harassment	1	1.7%
Gender Discrimination	1	1.7%
Physical Violence	0	0%
Psychological Violence	5	8.6%
Mobbing or Prolonged Psychological Harassment	1	1.7%
Economic Violence	2	3.4%
Maternal Discrimination	1	1.7%
Not presented	47	81%
Not applicable	0	0%
Total	58	100%

The study applied in this company made it possible to contrast the above findings with those of a logistics company with more robust organizational structures. In this context, the results offered a different panorama, although not free of relevant problems.

According to the data obtained, 81% of the people surveyed stated that they had not experienced or witnessed mistreatment at work. This figure contrasts significantly with the results obtained in call centers, which could be explained by several factors: the existence of clearer internal policies, a different corporate culture or even the fear of expressing harassment situations in an environment where there may not be institutional trust.

However, there were cases of psychological violence, gender discrimination and sexual harassment, although in smaller proportions. The research identified that these practices tend to go unnoticed or unrecognized as forms of violence due to their subtlety or frequent naturalization. For example, sexist comments, exclusion of women in relevant decisions or offensive jokes may be seen as normal, even by the victims themselves.

Of particular concern is the detection of cases of mobbing, although not quantified in this part of the study. It is said that this phenomenon is usually silent, prolonged in time and difficult to report, suggesting the existence of covert dynamics of harassment in the workplace. The invisibility of mobbing reveals an institutional weakness that can lead to serious consequences, such as demotivation of female employees, the loss of female talent or even mental health problems.

These findings demonstrate that, although reporting levels of maltreatment are lower, it cannot be assumed that the problem does not exist. On the contrary, it is necessary to strengthen the channels of feedback and denunciation, train personnel in the recognition of symbolic violence and generate an environment of trust where women workers can express themselves without fear of reprisals.

Figure 4
Applied instrument business sector 2

¿Cómo ha impactado el maltrato o acoso su desempeño y productividad laboral?

57 respuestas

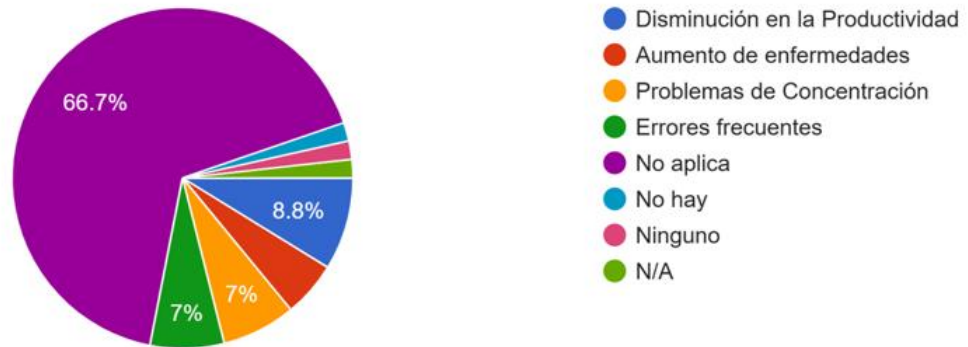


Table 4
Labor impact

Response options	Number of responses	Percentage
Decrease in productivity	5	8.8%
Increase in diseases	4	7.0%
Concentration problems	4	7.0%
Frequent errors	4	7.0%
Not applicable	1	1.8%
There is no	1	1.8%
None	38	66.7%
Total	57	100%

The results reflected in Table 3 show a substantial difference in the perception of mistreatment or harassment at work compared to other business contexts evaluated. Of the 57 people surveyed, 66.7% indicated that they had not experienced any type of mistreatment or harassment, which is a significant finding, as it contrasts with the high rates of workplace violence recorded in other sectors, such as call centers.

This result could be associated with several factors. First, the organizational culture of the company in question could have more effective prevention protocols, better working conditions, greater contractual stability or more reliable whistleblower channels. There may also be greater institutional awareness of gender equity and respect for labor rights, which contributes to the perception of a healthier and safer environment.

However, despite this encouraging data, the remaining 33.3% of the responses reveal that there are indeed manifestations of affectation associated with maltreatment.

These responses indicate that, although to a lesser extent, work dynamics persist that generate physical, mental or functional consequences for workers. The presence of symptoms such as errors, illnesses or decreased performance may be indicative of environments with moderate levels of stress, emotional charge or symbolic microviolence, often not formally recognized as harassment, but still affecting the well-being of workers.

Another important aspect is that a small percentage (1.8%) selected the options “None” or “Not applicable”, which could be interpreted as conceptual confusion regarding the questions, or as an indication that some people do not identify certain behaviors as workplace violence due to their naturalization within the organizational environment.

Figure 5

Applied instrument university sector 3

¿Qué tipo de maltrato o acoso ha experimentado o presenciado? (Puede seleccionar más de una opción)

50 respuestas

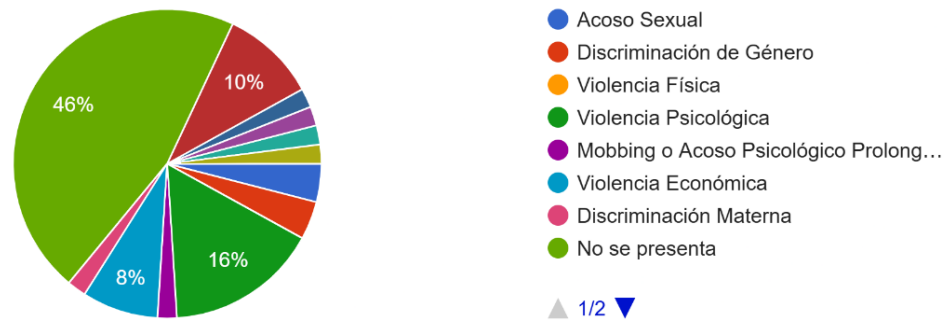


Table 5

Mistreatment or harassment they have experienced

Response options	Response number	Percentage
Sexual Harassment	2	4.1%
Gender Discrimination	2	4.1%
Physical Violence	0	0%
Psychological Violence	8	16.3%
Mobbing or Prolonged Psychological Harassment	1	2%
Economic Violence	4	8.2%
Maternal Discrimination	1	2%
Not presented	22	44.9%
Not applicable	5	19.2%
Total	50	100%

The third scenario of analysis was developed in female university students with previous or current work experience in different business sectors. This sample allows us to approach the perception of the new generations about labor mistreatment, as well as their expectations regarding the work environment.

The results show that 44.9% of the people surveyed have not experienced or witnessed any form of labor mistreatment. However, 16.3% reported having suffered psychological violence, which confirms that this is the most persistent form of violence in the workplace, even for those in the early stages of their professional careers. This type of mistreatment can arise in professional practices, informal or part-time jobs, where precarious conditions and lack of ethical supervision are frequent.

Economic violence was reported by 8.2%, while sexual harassment and gender discrimination were reported by 4.1% respectively. We also identified 2% of cases of mobbing and another 2% of cases of maternal discrimination. Although these numbers seem low, it is necessary to

consider that many female students may not have an extensive work history or may have naturalized certain abusive practices as part of “adapting” to the work environment. A relevant fact is that 19.2% of the women surveyed selected the option “Not applicable”, which could indicate that they have not yet formally entered the world of work. This group represents a key opportunity for training in labor rights, gender perspective and violence prevention, since these future professionals will be able to build more equitable labor relations if they have the conceptual and practical tools to identify abusive situations.

Figure 6
Applied instrument business sector 3

¿Cómo ha impactado el maltrato o acoso su desempeño y productividad laboral?
50 respuestas

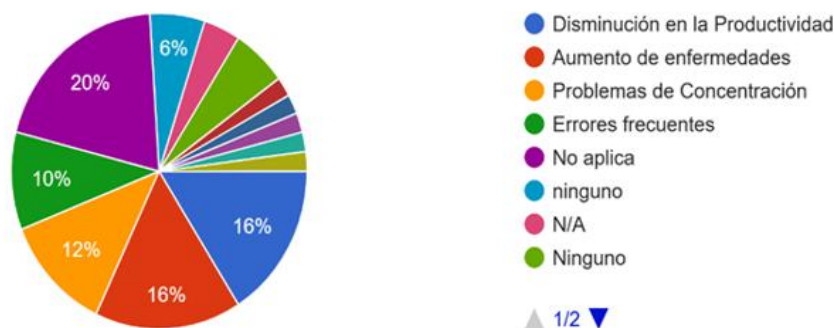


Table 6
Labor impact

Response options	Number of responses	Percentage
Decrease in productivity	8	15%
Increase in diseases	8	15%
Concentration problems	6	12%
Frequent errors	5	10%
Not applicable	3	20%
There is no	4	8%
None	10	20%
N/A	6	12%
Total	50	100%

The results reflected in Table 4 show a more balanced distribution in the perception of the impact of mistreatment or harassment at work among respondents, compared to other contexts previously analyzed. Of the 50 responses collected, 80% of people reported having experienced some type of negative effect, which evidences a significant presence of disruptive work dynamics in the workspaces evaluated.

The two most frequent categories were “decrease in productivity” (16%) and “increase in illness” (16%), indicating that labor mistreatment not only compromises the efficiency in the performance of tasks, but also the physical and mental health of the workers. These data are

consistent with previous research findings that associate bullying and symbolic violence with the development of stress, anxiety, chronic fatigue and other psychosomatic illnesses.

It is also noteworthy that 12% reported concentration problems, which can be interpreted as a symptom of emotional exhaustion, psychological pressure or hostile environments that hinder focus and cognitive performance. This type of affectation has a direct impact on the quality of the work performed and can lead to errors or interpersonal conflicts within the organizations. In this regard, 10% of respondents reported frequent errors, a figure that, although lower, reflects a direct consequence of the pressure and lack of safe conditions. These errors can be interpreted as indicators of deterioration of labor welfare and should be addressed with preventive actions by companies.

On the other hand, 20% of people stated that they had not experienced any form of harassment or mistreatment, while other categories such as “not applicable” (6%), “none” (8%) and “N/A” (12%) were also selected. These figures could suggest that some personnel do not feel directly affected, although it is also worth considering that some people may not identify certain practices as workplace violence due to their naturalization.

Comparison

When comparing the three contexts investigated on labor mistreatment of women in Colombia, it is possible to identify several worrying situations that are repeated and that show the depth of the problem. The first thing that jumps out is that psychological violence is the most common form of abuse. This includes shouting, humiliation, scorn, mockery and other forms of cruel treatment that are often seen as “normal” in the workplace, and therefore go unreported. This form of violence is so prevalent in different environments that it seems to have become part of everyday working life, which makes it more difficult to combat.

Another very frequent form of mistreatment is mobbing or constant and systematic harassment. This is especially true in companies such as call centers, where it was reported that almost half of the cases included this type of mistreatment. Affected workers mentioned that they were ignored, ridiculed or burdened with excessive tasks for no reason, which made them feel useless, lonely and emotionally worn out. This type of harassment is not casual, but shows that within some companies there are no clear rules or real protection to prevent a person from being repeatedly mistreated.

It was also found that, although to a lesser extent, cases of sexual harassment and physical violence continue to occur. These range from unwanted sexual comments to touching and in some cases even assault. Although they are not as frequent as other types of mistreatment, their mere presence in a workplace is already very serious. These are acts that deeply affect women, generating fear, mistrust and even trauma. Furthermore, these are crimes that must be punished, and it is unacceptable that they continue to occur in workplaces without clear consequences.

Another important aspect observed was discrimination against women because of their gender or because they are mothers. Although these cases were less reported, they reflect barriers that prevent them from advancing in their careers or having a level playing field. In many areas, women continue to have fewer opportunities for advancement, are excluded from important decisions or are restricted because they are mothers or of childbearing age. This affects their economic independence and limits their ability to lead and grow professionally.

Finally, something of great concern that appeared in all three contexts is that a high percentage of women do not report these situations, even when they are serious. This does not mean that everything is fine in these places, but that many times the workers are afraid to speak up. They fear losing their jobs, being judged or not being believed. In addition, they do not trust internal whistleblowing channels because they have seen that nothing happens when someone dares to

speak up. This forced silence shows that there is still a long way to go to create safe working environments where women can express what they experience without fear of punishment.

In summary, the mistreatment of women in the workplace in Colombia is a critical and profound problem that goes beyond isolated cases. There are common patterns that show a work culture that often allows or ignores mistreatment. To change this reality, it is not enough to have written rules: we need a real commitment from companies, leaders sensitive to the issue, and spaces where women can tell what they experience and receive real support. This is the only way to move towards a fair, safe and respectful work environment for all.

Discussion and Conclusions

The findings of this study allow us to affirm that labor mistreatment of women continues to be an invisible and normalized problem in the Colombian business context. The lack of institutional care routes, the absence of clear equity policies and the scarce training with a gender perspective make up an alarming panorama that requires urgent intervention on multiple fronts.

Organizations need to adopt internal protocols against harassment, ensure transparent processes for reporting and sanctioning, and promote an organizational culture based on equal opportunities. It is also recommended to implement periodic salary audits, sensitization programs and psychosocial and legal support for victims.

The eradication of labor mistreatment of women is not only an ethical imperative, but an indispensable condition for the sustainable and fair development of organizations. Future studies may delve deeper into specific sectoral analyses or include mixed methodologies that integrate qualitative perspectives.

Finally, the conclusions of the article will be presented in a last section, followed by the main conclusions. Where appropriate, limitations and proposals for continuity will be included.

The results of this research confirm that mistreatment of women in the workplace is a structural and persistent problem in the Colombian business environment, particularly in the city of Bogotá. The high prevalence of harassment, wage discrimination, invisibilization and micro-aggressions highlights the urgent need to transform organizational cultures to ensure safe, respectful and equitable work environments.

It was identified that a large number of women are unaware of or do not have effective access to institutional mechanisms for reporting these situations, which perpetuates the silence and normalization of mistreatment. Likewise, the lack of training with a gender focus in companies limits the awareness needed to eradicate these practices and promote an organizational culture based on equality.

Wage gaps and barriers to access leadership positions reinforce structural gender inequalities, affecting not only social justice but also the sustainable and ethical development of organizations. Thus, it is concluded that the eradication of mistreatment of women in the workplace is not only an ethical imperative, but an indispensable condition for the integral progress of society.

Limitations of the Study

The limitations include the non-probabilistic sample size and type, which restricts the generalization of the results to other contexts or regions of the country. In addition, the quantitative-descriptive approach limits the depth of understanding of individual experiences and emotional dynamics associated with workplace abuse.

Likewise, survey data collection may be subject to social desirability bias or reluctance to report sensitive situations, which may underestimate the true magnitude of the problem.

Continuity Proposals

Based on the findings obtained in this research, it is considered essential to continue to deepen the phenomenon of labor mistreatment of women in Colombia, not only as a manifestation of structural inequity in the world of work, but also as a problem of public health, social justice and organizational development. In this sense, several lines of action and recommendations are proposed that can be addressed by academia, companies, social organizations and governmental entities, in an articulated effort to build fairer, safer and more equitable work environments.

In the first place, it is proposed that studies with a broader geographic and sectoral scope be carried out to expand the sample to a national level and include different economic sectors - industry, education, health, technology, commerce, among others- in order to collect representative and diverse data. This would facilitate the development of comprehensive diagnoses on the forms, causes and consequences of labor mistreatment of women, and would provide valuable empirical inputs for the formulation of more effective public policies, institutional action plans and regulatory frameworks.

It is also recommended to maintain the mixed methodological approach, integrating qualitative techniques such as in-depth interviews, focus groups, narrative analysis and participatory observation. These tools allow access to the subjective experiences of women workers, making visible aspects that are often invisible in quantitative studies, such as symbolic violence, daily micromachismos, institutional silence in the face of complaints, and the social and economic barriers that prevent victims from accessing labor justice.

At the organizational level, we suggest the design and implementation of continuous training programs with a gender perspective, aimed at all hierarchical levels of the companies, from top management to operational personnel. These programs should address issues such as harassment prevention, non-sexist communication, labor conflict resolution with an inclusive perspective, and female leadership. In addition, it is crucial to establish clear, transparent and accessible protocols for the reporting, attention and follow-up of cases of abuse, guaranteeing respect for the rights of the victims, the confidentiality of the process and the effective punishment of those responsible.

On the other hand, it is considered pertinent to promote the periodic performance of salary audits with a gender perspective, which will make it possible to identify and correct gaps in income, promotion processes and access to leadership positions between men and women. These audits should be accompanied by institutional plans for labor equity, with goals, indicators and evaluation mechanisms, promoting a structural transformation of hiring practices, performance evaluation and internal promotion.

Likewise, the importance of creating institutionalized spaces for psychosocial and legal support for female workers who have been victims of labor mistreatment is also highlighted. These spaces must have trained personnel, integrated care routes, coordination with state entities and civil society organizations, and guarantees of protection against possible reprisals or revictimization. Mental health care, legal counseling and women's empowerment are key components to achieve comprehensive reparations and avoid the repetition of these events.

Finally, it is hoped that this study will not only contribute to the academic production on labor mistreatment with a gender perspective, but will also serve as a tool for raising awareness and social transformation. Making visible the dynamics of labor violence faced by women in Colombia is the first step to denaturalize them and generate collective awareness of the need to eradicate them. Institutions, companies and academic communities are called upon to continue working together to build dignified, inclusive, egalitarian and violence-free work environments, where all people, regardless of gender, can fully develop.

Acknowledgments

We express our deepest gratitude to all the women who participated in this research, who, with courage, openness and generosity, shared their experiences, perceptions and reflections on labor mistreatment. Their testimonies not only significantly enriched the development of this study, but also constitute an act of resistance and an invaluable contribution to the advancement of knowledge with a gender perspective in the Colombian labor context. Their willingness to recount often painful experiences reflects an admirable commitment to transforming work environments into more just, safe and humane spaces for future generations.

Likewise, we extend our sincere recognition to the research group of the Corporación Universitaria Minuto de Dios - UNIMINUTO, whose academic, methodological and ethical support was fundamental in each stage of the research process. The collaborative work, research rigor and social commitment of its members allowed the consolidation of this research as an educational exercise of great value for the university community and for society in general.

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Finally, we acknowledge the support of teachers, tutors and advisors who, from their different areas of expertise, provided key guidance to strengthen the focus and structure of this study. This research is the result of a collective effort to make visible, understand and eradicate the multiple forms of violence faced by women in the workplace, and would not have been possible without the strong support of all the people and groups mentioned above.

Conflict of Interest

The authors of this article explicitly declare that there are no financial, personal, academic or institutional conflicts of interest that have influenced the design, execution, analysis, interpretation or writing of the results presented. The research was developed independently, with full academic autonomy, and with the ethical commitment to guarantee the scientific integrity of the research process. All methodological and analytical decisions were made objectively, oriented exclusively to the fulfillment of the objectives of the study and to the rigorous contribution to the knowledge on labor mistreatment of women in Colombia.

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Fluent Aphasia and Bilingualism: Impaired Comprehension and Expression in Languages

Afasia Fluente y Bilingüismo: Alteración de la comprensión y expresión en las Lenguas

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ABSTRACT

Key words:

Bilingualism, Fluent Aphasia, Brain, Aphasia and Internal Language.

Introduction: The aim of this research was to establish a connection between linguistic comprehension and expression in fluent bilingual aphasic patients, in order to understand the alterations that occur in languages and how their use and management are affected. **Methodology:** A descriptive and systematic literature review was conducted, compiling studies published in the last 10 years in specialized databases (PubMed, SciELO, Cochrane Library, BEIC, Google Scholar). Articles in Spanish and English were selected, focusing on bilingual adults (aged 18-75) with fluent aphasia. Rigorous inclusion and exclusion criteria were applied to ensure the relevance and methodological quality of the studies analyzed. **Results:** The findings show that bilinguals with fluent aphasia have significant impairments in language comprehension and production, especially in the non-dominant language. It was observed that the severity and pattern of impairment vary according to the type of bilingualism, the age of language acquisition, and the executive control required to switch between languages. In addition, the usual diagnostic tools for monolinguals are insufficient for evaluating bilinguals. **Discussion/Conclusion:** It is concluded that fluent aphasia in bilingual patients requires a differentiated approach that considers sociolinguistic contexts and individual cognitive mechanisms. It is essential to adapt

evaluation and rehabilitation strategies to optimize the recovery and communicative wellness of this group.

RESUMEN

Palabras clave:

Bilingüismo, Afasia fluente,
Cerebro, Afasia y Lenguaje interno.

El objetivo de esta investigación fue establecer alguna relación entre la comprensión y expresión lingüística en pacientes afásicos fluentes bilingües, para así comprender las alteraciones que se producen en las lenguas y cómo se ve afectado el uso y manejo de estas. Se realizó una revisión bibliográfica descriptiva y sistemática, recopilando estudios publicados en los últimos 10 años en bases de datos especializadas (PubMed, SciELO, Cochrane Library, BEIC, Google Académico). Se seleccionaron artículos en español e inglés, centrados en adultos bilingües (18-75 años) con afasia fluente. Se aplicaron criterios de inclusión y exclusión rigurosos para asegurar la relevancia y calidad metodológica de los trabajos analizados. Los hallazgos evidencian que los bilingües con afasia fluente presentan alteraciones significativas en la comprensión y producción del lenguaje, especialmente en la lengua no dominante. Se observó que la severidad y el patrón de afectación varían según el tipo de bilingüismo, la edad de adquisición de las lenguas y el control ejecutivo requerido para alternar entre ellas. Además, las herramientas diagnósticas habituales para monolingües resultan insuficientes para evaluar a bilingües. Se concluye que la afasia fluente en pacientes bilingües requiere un abordaje diferenciado que considere los contextos sociolingüísticos y los mecanismos cognitivos individuales. Es fundamental adaptar las estrategias de evaluación y rehabilitación para optimizar la recuperación y el bienestar comunicativo de este grupo.

Introduction

Imagine for a moment waking up one morning and not being able to find the words to say "good morning", neither in your native language nor in the one you painstakingly learned later in life. You try to speak, but what comes out of your mouth are disorganized sentences, words that don't mean what you meant to say, or worse, sounds that you can't recognize as your own. This is the daily reality for many people living with aphasia, and when it comes to bilingual people, the challenges multiply.

Aphasia is one of the most complex and challenging language disorders, both for those who experience it first-hand and for the professionals who accompany them in their recovery process. It is an alteration in the ability to understand or express language, caused by lesions in specific areas of the brain. This condition can affect the way a person speaks, writes or understands what he or she hears. Among the different forms in which it presents itself, fluent aphasia becomes particularly important when it occurs in bilingual individuals (Abreu et al., 2019). In these cases, the challenge is even greater, since not only one language is affected, but two linguistic systems coexist in an injured brain.

Today, being bilingual is commonplace in an increasingly connected and multicultural world. Many people grow up speaking two languages, while others learn them later in life for family, educational or work reasons. This ability requires the brain to constantly manage, select and switch between two languages, which requires a high level of coordination and cognitive control. When a brain injury, such as a stroke, occurs, these mechanisms are profoundly altered, and the way aphasia symptoms are expressed can vary greatly from person to person. Thus, researchers have paid increasing attention to how aphasia manifests itself in bilingual individuals, since unlike those who speak only one language, bilinguals may experience different impairment in each language, because some retain their mother tongue better, others the second, and in some cases, both are compromised to varying degrees. This variability is influenced by factors such as the age at which the languages were learned, how much they are used in everyday life, and the cultural context in which the person lives.

From a neurological point of view, fluent aphasia is usually due to damage in areas of the left hemisphere of the brain, such as Wernicke's area. These regions are essential for understanding the meaning of words and constructing coherent discourse (Le et al., 2025; Toledo Rodríguez & Tobar Fredez, 2021).. When they are affected, people can speak fluently, but their speech loses meaning, invented or misused words appear, and it is very difficult to find the correct terms, something that stands out in bilingual contexts (Córdova Gastiaburu, 2024) (Córdova Gastiaburu, 2024).

The numbers are also important, as the American Speech-Language-Hearing Association (ASHA) reports that between 100,000 and 180,000 people develop aphasia each year in the United States, and nearly half of those who have suffered a stroke have some degree of the disorder. In adults over 85 years of age, the prevalence exceeds 40%, representing a major challenge for evaluation and therapy, since the interaction between two possibly unequally affected languages must be considered (*Aphasian. d.*).

Therefore, addressing fluent aphasia in bilingual individuals involves much more than just assessing their language abilities, but understanding how their brains work, how their languages interact, and how their personal and cultural history influences them. There are different types of fluent aphasia such as Wernicke's aphasia, sensory transcortical aphasia, conduction aphasia and anomic aphasia, each with unique

characteristics that guide diagnosis and intervention strategies. But beyond the clinical aspect, affected bilingual people tend to present profound changes in their daily lives, as they have difficulty finding the right word, mix languages unintentionally, or feel frustrated for not being able to communicate what they think, impacting their self-esteem, identity and the way in which the person relates to his or her environment. The impossibility of choosing which language to use in each situation or keeping the two languages separate can lead to frequent errors and a greater emotional burden during the recovery process.

For this reason, the present work seeks to understand in depth how fluent aphasia affects bilingual people, specifically to know how their comprehension and expression is altered, what brain mechanisms are involved, and what are the best strategies to evaluate and accompany their rehabilitation. Through a systematic review of the most recent literature, the aim is to build a solid foundation to guide both researchers and clinicians in addressing this complex reality.

Method

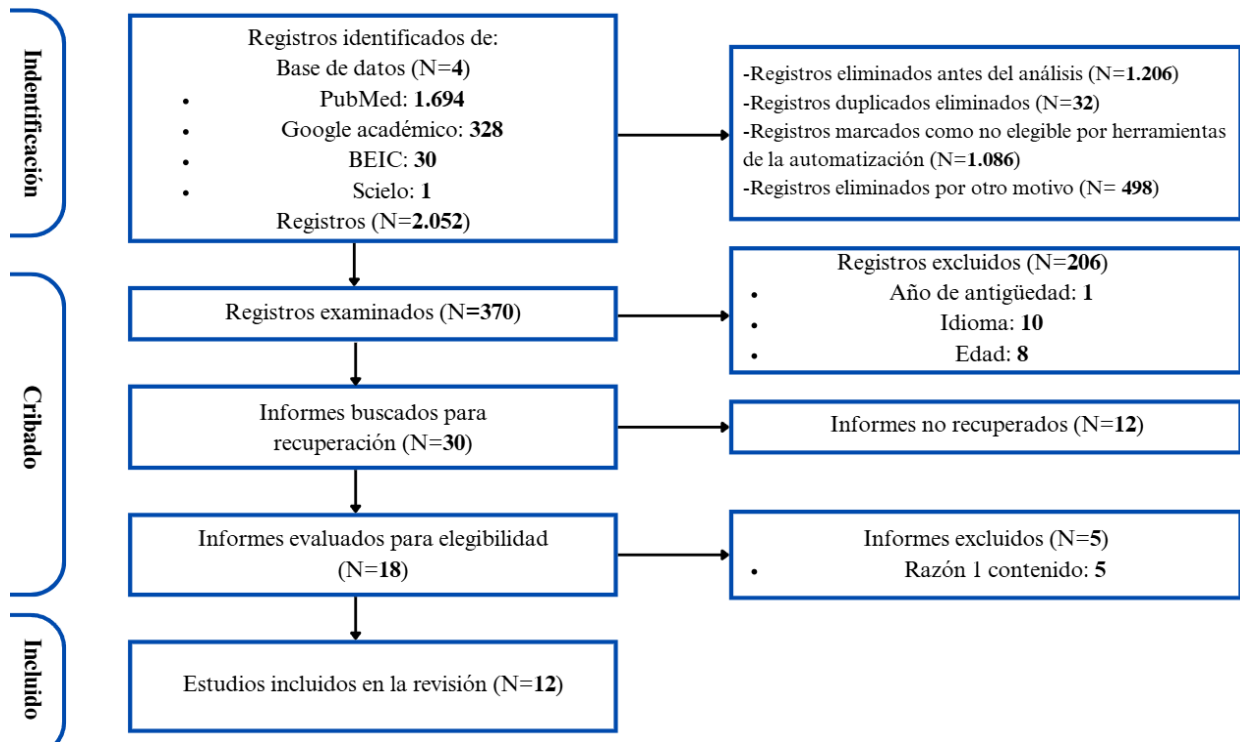
This work corresponds to a descriptive bibliographic review, whose objective was to compile, analyze and synthesize the scientific evidence available on the topic addressed. To this end, a systematic search of scientific literature was carried out in various databases and specialized search engines, such as PubMed, SciELO, Cochrane Library, Electronic Library of Scientific Information (BEIC) and Google Scholar.

Document filtering was carried out using specific keywords related to the topic of study, such as "Bilingualism, Aphasia, Brain, Inner Language and Fluent Aphasia", which were combined using operators (AND, OR) to optimize the search and improve the results.

The inclusion criteria established for the choice of studies included: articles 10 years old to date, in Spanish or English, dealing directly and explicitly with the topic of interest, originating in scientific journals, and providing concrete evidence or systematic reviews relevant to the field of study. In addition, the age of the users in the selected studies was included as a criterion, considering exclusively adults between 18 years of age (young adult) and 75 years of age (older adult). Finally, articles without full access to the text, and documents that lacked methodological rigor or whose subject matter was not directly related to the research topic were discarded (Figure 1).

FIGURE 1

Systematic review PRISMA flowchart



Note: Own elaboration (2025)

Theoretical Framework

1. AFASIA

1.1 DEFINITION

Aphasia is a cognitive disorder characterized by a decrease or impairment in language comprehension and production, resulting from damage to the primary linguistic areas of the brain. This disorder can manifest itself in a receptive, expressive or combined manner, which will affect various dimensions of language such as listening comprehension, oral expression, reading and writing. Generally, it is due to the consequence of focal brain damage, such as occurs in cerebrovascular events, trauma or neurodegenerative diseases, significantly impacting the individual's ability to communicate clearly, accurately, and effectively (Abreu et al., 2019; *Aphasia - MeSH - NCBI*, n. d.).

In addition to the above, anomia is an initial symptom of aphasia and is one of the last symptoms to appear in patients recovering from aphasic brain damage. It is related to memory alterations, a drop in synaesthesia and is caused by the interruption of connections between neurons (Azcoaga, 2003).

1.2 CLASSIFICATION OF APHASIA

In 1720 Paul Broca and Karl Wernicke through a study distinguished some areas of the left hemisphere that play an important role in the expression and comprehension of language (Toledo Rodríguez & Tobar Fredez, 2021). Defining several categories, but being those of Luria and the Boston School Group the most important, since Luria perceives language as a functioning system, suggesting seven types of aphasia based on the level of altered language (Table 1) (Toledo Rodríguez & Tobar Fredez, 2021). While

the Boston School Group proposes two points of view: one focused on the location of the lesion (cortical or subcortical) and the other on language fluency (fluent, semifluent or non-fluent) (Table 2) (Toledo Rodríguez & Tobar Fredez, 2021). Currently, this last proposal is the one used to categorize the different types of aphasia.

TABLE 1
Classification of aphasias according to Luria

Type of aphasia	Language Level
Acoustic - Agnosica	Phonemic discrimination
Acoustic - Amnesica	Verbal memory
Amnesia	Semantic structure of words
Semantics	Understanding of logical-grammatical relationships and quasi-spatial structures
Motor Afferent	Discrimination
Efferent Motor	Speech kinesthetic melody disorder
Dynamics	Verbal initiative

Note: Book "Phonoaudiological management of the person with aphasia"

TABLE 2
Classification and typology of aphasia, according to the Boston School Group

Fluent aphasias (cortical)	Non-fluent aphasias (cortical)	Semifluent aphasia (subcortical)
- Wernicke's aphasia	- Broca's aphasia	- Striato-capsular aphasia
- Sensory transcortical aphasia	- Transcortical motor aphasia	- Thalamic aphasia
- Conduction aphasia	- Mixed transcortical aphasia	- Aphasia due to paraventricular white matter injury
- Anomic aphasia	- Mixed non-fluent aphasia	
	- Global aphasia	

Note: Book "Phonoaudiological management of the person with aphasia"

1.2.1 Fluent cortical aphasias

- *Wernicke's aphasia*: It usually originates from a lesion in the Wernicke's area (Toledo Rodríguez & Tobar Fredez, 2021). This condition severely affects comprehension and naming, and is manifested by paraphasias (literal, phonemic, neologisms or slang). Patients have difficulty finding and repeating words, resulting in speech with little meaningful content. In addition, users are often unaware of their errors, this as a consequence of damage to the brain areas responsible for semantic processing (Le et al., 2025; Toledo Rodríguez & Tobar Fredez, 2021).
- *Sensory transcortical aphasia*: The lesion occurs at the temporoparietal junction, without affecting Wernicke's area (Toledo Rodríguez & Tobar Fredez, 2021). It causes fluent speech with impaired verbal comprehension, but repetition will be relatively preserved. Patients present anomia, slang and various types of paraphasias (phonemic, neological and semantic). Although

they usually retain the phonological level, semantic processing is severely impaired, allowing the repetition of words but without understanding their meaning. In addition, it is common to use echolalia and circumlocutions to maintain an appearance of verbal fluency (Jiménez de la Peña et al., 2018; Le et al., 2025).

- *Conduction aphasia*: The lesion will be reflected in the supramarginal gyrus and in the underlying white matter affecting the arcuate fasciculus. It is characterized by a fluent language and good comprehension, however, its main feature is the alteration in repetition and the presence of phonemic paraphasias (errors in speech sounds) (Toledo Rodríguez & Tobar Fredez, 2021) in addition to presenting marked difficulties in repeating words or phrases, problems in naming, reading, writing and, in some cases, ideomotor apraxia (Jiménez de la Peña et al., 2018).
- *Anomic aphasia*: The lesion may be located in the angular gyrus (AB 39) or second and third temporal gyri (AB 21 and 20). It is distinguished by having a fluent and correct language, but those who manifest it emit ambiguous words and circumlocutions, increasing frustration because they express "having the word on the tip of their tongue" (Toledo Rodríguez & Tobar Fredez, 2021) (Toledo Rodríguez & Tobar Fredez, 2021).

1.3 ETIOLOGY AND NEUROPATHOLOGY

The main cause of the appearance of aphasia will be due to lesions in the brain structures that are fundamental for language, the main ones being Broca's area (AB 44 and 45), Wernicke's (AB 22 and 44) and the arcuate fasciculus. Among which, the most common is due to stroke, although it can also occur due to traumatic brain injury, brain tumors and neurodegenerative disorders such as Alzheimer's disease (Le et al., 2025).

Now, the type of aphasia that a person presents will depend on the location of the brain damage: if it occurs in the dorsal frontotemporal cortex, a non-fluent and forced aphasia is produced; if the damage is in the ventral temporal cortex, it results in a fluent aphasia with cognitive deficits. Lesions in the gray matter generate conduction aphasia, while alterations in the cerebral connections - due to infarcts in the hippocampus caused by hypoxemia, severe hypotension or ischemic stroke in the left middle zone - cause transcortical aphasia (Le et al., 2025).

2. BILINGUALISM

2.1 DEFINITION

It is the ability of a person to communicate fluently in two different languages, either simultaneously or alternately (Quispe et al., 2021). But, which people do we consider as "bilingual", we will consider as "bilingual" those who are fluent in two languages; however, this will depend on the experience of each individual in the acquisition and use of these languages, since some people acquire the second language from "birth", that is, according to the surrounding environment, and others through immersion programs or living in a foreign country (Signoret Dorcasberro, 2003a).

2.2 TYPES OF BILINGUALISM

The most frequent and widely used classification is the one that differentiates between coordinated and compound bilingualism (Rosselli, 2021).

2.2.1 Coordinated bilingualism

It is understood when a person develops two linguistic systems independent of each other. It will be characterized because this individual speaks these two languages as if he/she were monolingual, using different linguistic structures, where words and languages do not interfere or mix with each other {Updating}.

2.2.2 Compound bilingualism

It is when a person uses both languages simultaneously. The individual has a single meaning for two signifiers, i.e., he/she is unable to perceive the conceptual differences between both languages, so he/she would combine linguistic elements of both languages, simultaneously needing both languages to be able to communicate, given that when making this combination, the person would not know how to communicate in only one language (Rosselli & Ardila, s. f.; Signoret Dorcasberro, 2003a).

Of the composite bilingualism, we have two additional subcategories, which would be (Signoret Dorcasberro, 2003a):

- *Subordinate bilingualism*: It will be understood when a person learns a second language mediated by his or her first mother tongue. In this case, it is understood that the L1 ("mother tongue") functions as a bridge that facilitates the comprehension and production of the L2 ("acquired language") (Signoret Dorcasberro, 2003a).
- *Balanced bilingualism*: In this type of bilingualism, the individual who uses both languages has similar skills. However, it is difficult to identify, as people always tend to prefer one language over the other, so it would not be as common to observe or hear (Signoret Dorcasberro, 2003a).

To classify the types of bilingualism, it is also necessary to consider the moment when the acquisition takes place, differentiating between early bilingualism, which refers to when a person learns two languages at an early age, and late bilingualism, where the second language is incorporated after the age of 12 (Rosselli, 2021).

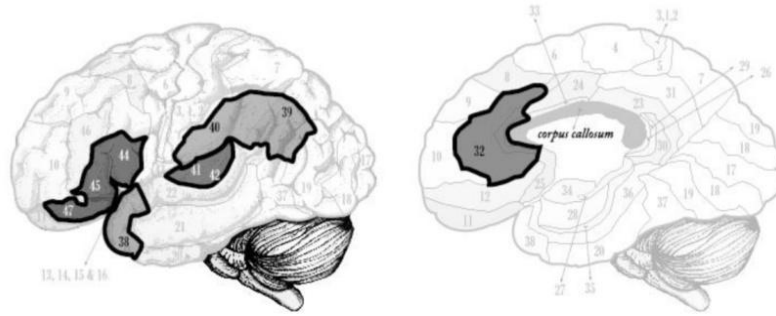
2.3 BILINGUALISM IN THE BRAIN

There are certain differences in brain structure and functioning between bilinguals and monolinguals. These changes are more noticeable in active bilinguals, i.e., those who use both languages persistently in their daily life (Rosselli, 2021). The constant use of two languages in a person allows him/her to develop a greater capacity for cognitive control, thus improving the management of selective attention, problem solving, planning, decision making and working memory (Rosselli, 2021).

These storage "changes" that occur in bilingualism at the brain level are basically structural and functional modifications. One of these changes, which is the most notable, is the increase in gray matter (GM) density in the left inferior parietal cortex in bilinguals compared to monolinguals, this increase in gray matter (GM) is also observed in the anterior cingulate gyrus, the left inferior frontal gyrus and the left anterior temporal lobe (Rosselli, 2021). Likewise, it was found that the increase in gray matter is related to the growth of second language proficiency, and it was also observed that changes in the white matter of the left parietal regions and the left Heschl's gyrus of the temporal lobe were related to the growth of second language proficiency (Rosselli, 2021) (Rosselli, 2021) (Rosselli, 2021). The areas involved in these modifications can be easily recognized in the brain, as detailed in (Figure 2).

FIGURE 2

Figura 1
Áreas Corticales Asociadas al Bilingüismo



Nota. Las áreas de Brodmann (BA) que muestran un aumento de materia gris o grosor cortical en bilingües en comparación con monolingües. En ambos hemisferios, la circunvolución del cíngulo anterior (BA 32); En el hemisferio izquierdo, la circunvolución frontal inferior (BA 44, 45 y 47), el lóbulo temporal anterior (BA 38), el lóbulo parietal inferior (BA 39 y 40) y la circunvolución de Heschl (BA 41 y 42) (Rosselli y Ardila, 2018).

Note: Bilingualism, cognition and brain plasticity.

Thus, the left inferior fronto-occipital fasciculus is larger in simultaneous bilinguals than in sequential bilinguals and monolinguals, with semantic data transfer being faster in simultaneous bilinguals (Rosselli, 2021) (Rosselli, 2021). The bundle that begins to appear from the anterior corpus callosum proceeds to the orbitofrontal lobe, and is smaller in simultaneous bilinguals than in monolinguals (Rosselli, 2021).

There is an increase in the subcortical structure found in the putamen and bilateral thalami, as well as in the left globus pallidus and the right caudate nucleus (Rosselli, 2021).

It was also recognized that the left inferior frontal gyrus in bilinguals is of greater magnitude. However, other authors have suggested that functional connectivity may change according to the type of bilingualism that the person presents (Rosselli, 2021).

3. APHASIA AND BILINGUALISM

As is well known aphasia is a language disorder caused by brain lesions that affect comprehension, expression and language processing (Abreu et al., 2019). The key brain areas involved are Broca's area, Wernicke's area and the arcuate fasciculus, which are affected differently depending on the type and severity of aphasia. In cases such as conduction aphasia, the gray matter, which is involved in information processing and cognitive functions, is also compromised (Le et al., 2025).

The mastery of two languages causes slight structural and functional modifications in the brain, such as an increase in the density of the gray matter and cortical dimension in bilingual people, in addition there will be changes in functional connectivity, particularly in the dominant hemisphere, which is generally the left one (Rosselli, 2021) (Rosselli, 2021).

From bilingual aphasia, observable characteristics of alteration of these languages in patients are exposed, which can be (Agurto, 2019):

- *Parallel:* This will result in the affectation in both languages.
- *Differential:* Unequal impact of languages.
- *Successive:* It happens that one language does not recover until the other has partially recovered.
- *Selective:* Restoration of one language over the other.

- *Antagonist*: One language progresses and the other declines.
- *Mixed*: A "fusion" of languages takes place.

These brain modifications linked to bilingualism, such as the improvement of cognitive control and the increase of density in some areas, could have an influence on comprehension and expression in bilingual patients with an aphasic condition (Agurto, 2019).

Thus, aphasia in bilingual patients has unique features due to the different representation of the two languages in the brain. Lesions can unevenly affect the two languages depending on their proficiency, the environment of acquisition or use (Agurto, 2019). It is generally assumed that languages that are more integrated into everyday life and those acquired at an early age tend to be less compromised (Quispe et al., 2021; Signoret Dorcasberro, 2003a).

Results

In relation to the results reviewed in the literature, it was determined that bilingual individuals with fluent aphasia usually present difficulties in understanding and expressing themselves. However, these difficulties do not have similarities among themselves; they depend on the type of fluent aphasia, the daily use and structure of the language and the related cognitive skills. As an example, those with Wernicke's aphasia often have problems maintaining coherence and repeating words or phrases, while patients with sensory transcortical aphasia can repeat words and utterances without problems, even if they have failures in the precise words. In the case of bilingual individuals, performance may change depending on which language predominates, their prior skills and their ability to control the language they use. There are also different patterns of impairment in how they process the meaning and sounds of words, which affects their comprehension. The way they produce speech varies according to the type of aphasia, and standardized tests do not always reflect how they usually communicate in real life, so it is much more useful to analyze their speech in natural, everyday situations. In addition, techniques such as noninvasive brain stimulation (such as TMS and tDCS) have been shown to be useful in reorganizing language in the brain, and some patients maintain some flexibility in understanding and language switching, depending on the type of aphasia and the therapy they receive (Table 3).

TABLE 3

Author(s)	Focus of the study	Type of aphasia / population	Methodology	Main findings
(Córdova Gastiáburu, 2024)	Discourse and pragmatic analysis	Fluent aphasia (Wernicke and transcortical) - Quechua-Spanish monolinguals and bilinguals	Boston test + spontaneous conversation	Wernicke: more monologic and with agrammatisms; transcortical: they repeat better but with lexical errors. Bilinguals richer in speech acts.

(Khachatryan et al., 2016)	Bilingual aphasia processing	Bilinguals with aphasia	Review of cases and patterns	Bilingual aphasia is unique, not the sum of two monolinguals. Language interaction and cognitive control.
(Calabria et al., 2019)	Semantic control and bilingualism	Bilinguals with aphasia (Catalan-Spanish)	Name, pairing, flanker task	More interference in non-dominant language; relationship between semantic and executive control.
(Robson et al., 2017)	Semantic and phonological processing	Wernicke's aphasia	ERP study (N400 and PMN)	Reduced N400 and PMN; impaired comprehension due to phonological and semantic deficits.
(Hazamy & Obermeyer, 2020)	Coherence and information in the speech	Fluent vs. non-fluent aphasia	Description of images	Fluent: more coherent and informative but with thematic errors; non-fluent: incomplete sentences.
(Pérez Naranjo et al., 2023)	Predictors of descriptive discourse	Fluent aphasia and control group	Image description + cognitive tasks	Naming and semantics predict speech; attention not meaningful.
(Hartwigse, 2015)	Brain stimulation and recovery	Screening in healthy brains (applicable to aphasia)	Review of TMS and tDCS	NIBS allows observation of brain reorganization; useful for post-stroke recovery models.
(Salmons & Muntané-Sánchez, 2023)	Bilingual patient evaluation	Bilingual Catalan/Spanish with fluent aphasia	CAT in both languages	Better performance in the dominant language (Spanish); the structure of the language has an influence.
(Grunden et al., 2020)	Voluntary language change	Bilinguals with aphasia vs. controls	Image naming in blocks	Partial preservation of reactive control; impaired proactive control. Facilitating cognate effect.
(Bose et al., 2022)	Verbal fluency and executive control	People with aphasia vs. control group	Phonemic and semantic fluency + Stroop, TMT	Deficits in fluency due to a combination of lexical and executive failures.
(Viglicca, 2019)	Severity in fluent vs. non-fluent aphasia	Persons in the acute phase of aphasia	Brief Assessment of Aphasia (BAE)	Fluent aphasia is no less severe; it may have greater discursive disorganization.
(Reißner et al., 2024)	Semantic flexibility with quantifiers	Fluent vs. non-fluent aphasia	Computerized tasks with feedback	Only fluent speakers adapt their semantics with feedback. Non-fluent do not achieve fit.

Discussion and conclusions

According to the systematic review conducted, it has been found that bilingual patients with fluent aphasia need to be evaluated and treated from a broader perspective. Robson et al. (2017) indicate that people with Wernicke's aphasia show significant problems in areas such as repetition, meaning comprehension, and speech organization. In addition, Córdova Gastiaburu (2012) points out that bilingual speakers tend to have greater variability in the way they express themselves, including alternating between different languages or codes, which can be beneficial for some aspects of verbal communication.

On the other hand, Salmons and Muntané (2015), together with Calabria et al. (2020), highlight that language performance in bilinguals is influenced by factors such as mother tongue, how each language is structured and how much it is used in daily life. Studies with Catalan and Spanish speakers show differences in their comprehension and in errors related to meaning in both languages, evidencing that learning and using two languages generates variability in their structure and functioning.

Khachatryan et al. (2016) argue that bilingual aphasia should not be understood as the simple sum of two monolingual aphasias, but as a complex condition, with its own characteristics, which depend on variables such as the age at which the languages were learned, the structural differences between them and the control exercised over each one. In turn, research by Hazamy and Obermeyer (2013), Bose et al. (2020) and Pérez Naranjo et al. (2021) show that people with fluent aphasia tend to have more difficulties in tasks such as describing images or maintaining verbal fluency, which is related to problems in word access and language production. On the other hand, they tend to perform better than those with non-fluent aphasia.

Regarding control mechanisms, Grunden et al. (2023) found that there is a relationship between the ability to control executive functions and the ability to switch languages, although performance in the non-dominant language is usually lower. Calabria et al. (2020) also mention that meaning processing may vary depending on the cognitive load involved in the tasks. In contrast, Reißner et al. (2021) suggest that the flexibility to understand different meanings can be maintained in patients with fluent aphasia, especially if they receive clear feedback, which has important implications for clinical therapy. Finally, Vigliecca (2011) challenges the idea that fluent aphasia is necessarily less severe than non-fluent aphasia, showing that, in some cases, aphasia of the fluent type may involve greater difficulties in the number of words that can be understood and produced. This highlights the importance of more specific and in-depth evaluations and treatments, especially in bilingual patients.

Therefore, fluent aphasia in bilingual individuals represents a complex clinical condition that profoundly impacts both language comprehension and expression. This impact varies significantly among patients, given that not all users will share fixed characteristics, depending on factors such as the age of language acquisition, the degree of mastery of each language, its use in daily life and the specific type of aphasia (fluent, non-fluent or semi-fluent). Unlike what happens in monolinguals, in bilinguals the symptomatology is not uniform, since different patterns of impairment may occur between languages, affecting the dominant or non-dominant language to a greater or lesser extent, which makes standard assessment and treatment difficult. It is concluded that fluent aphasia in bilingual individuals should be approached from a comprehensive perspective, considering not only the linguistic aspects, but also the neurocognitive,

sociocultural and personal aspects of each patient. The clinical approach must go beyond the use of traditional tests, integrating specific assessment instruments for bilinguals that contemplate the analysis of spontaneous speech and the particularities of both languages.

Acknowledgments

The completion of this thesis represented a deeply enriching academic experience, marked by a continuous process of exploration, research and overcoming challenges, which contributed significantly to our personal and professional growth.

We express our most sincere gratitude to the faculty of the Phonoaudiology career of the Universidad de Los Lagos, Osorno, who, throughout this formative process, guided us with commitment and dedication. Thanks to his teachings, we were able to understand the complexity of brain diversity, as well as the different alterations and transformations that are manifested in the differential diagnosis of aphasia. This knowledge was fundamental to understanding how language can be significantly affected in bilingual patients with this condition.

We would also like to extend a special thank you to those who have given us their unconditional support along the way. Our deepest gratitude goes to our mothers, fathers, sisters and grandparents for being there for us in the most challenging moments, for encouraging us when we needed it most and for celebrating with us every little step forward. We also thank our friends who, with their words of encouragement and collaboration, contributed directly or indirectly to the development of this research.

Finally, we would like to express our appreciation to all those who value and promote the importance of scientific research, allowing the visibility of complex realities such as that of bilingual patients with aphasia, especially in a current context marked by increasing globalization.

Conflict of interest

The authors declare that they do not have any conflict of interest, whether economic, academic or personal, that has influenced the development of this research.

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**ACCESSIBLE SIGNAGE AND AUGMENTATIVE COMMUNICATION IN PUBLIC WORKS FOR
INCLUSIVE CITIES AND COMMUNICATIVE LITERACY**

**Señalética accesible y comunicación aumentativa en obras públicas para ciudades
inclusivas y alfabetización comunicativa**

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ABSTRACT

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In an increasingly urbanized world, accessible signage and augmentative communication become vital tools to create cities that include everyone, regardless of visual, cognitive, or motor disabilities. This article examines how these practices integrate into public works, promoting communicative literacy that empowers marginalized people to navigate and participate in urban spaces. Through a systematic review of recent studies, designs of signs for older adults in hospitals are analyzed, where size and contrast improve understanding and reduce confusion. The use of pictograms in emergencies like Covid-19 is addressed, with strategic placement and colorful graphics effectively transmitting prevention. Eye-tracking in constructions is highlighted, showing intense colors and simple shapes optimizing retention and minimizing risks. Additionally, inclusive frameworks encompassing cultural diversity and equity are discussed, inspired by audits of built environments for universal design. The author believes these innovations not only prevent accidents but also strengthen social bonds by making cities empathetic. Finally, urban policies focused on sustainability and inclusion are proposed, transforming public works into connectors towards fair societies.

RESUMEN

Palabras clave:

accesibilidad, comunicación,
ciudades, inclusión social,
alfabetización

En un mundo que se urbaniza rápidamente, la señalética accesible y la comunicación aumentativa se convierten en herramientas vitales para crear ciudades que incluyan a todos, sin importar discapacidades visuales, cognitivas o motoras. Este artículo examina cómo estas prácticas se integran en obras públicas, promoviendo una alfabetización comunicativa que empodera a personas marginadas para navegar y participar en el espacio urbano. A través de una revisión sistemática de estudios recientes, se analizan diseños de señales para adultos mayores en hospitales, donde tamaño y contraste mejoran comprensión y reducen confusiones. Se aborda el uso de pictogramas en emergencias como el Covid-19, con colocación estratégica y gráficos coloridos transmitiendo

prevención efectivamente. Se destaca el seguimiento ocular en construcciones, mostrando colores intensos y formas simples optimizando retención y minimizando riesgos. Además, se discute marcos inclusivos que abarcan diversidad cultural y equidad, inspirados en auditorías de entornos construidos para diseño universal. El autor opina que estas innovaciones no solo evitan accidentes, sino que fortalecen lazos sociales al hacer urbes empáticas. Finalmente, se proponen políticas urbanas enfocadas en sostenibilidad e inclusión, transformando obras públicas en conectores hacia sociedades justas.

Introduction

Think of a city where the signs do not exclude anyone, adapting to each person so that no one gets lost because of age or disability. This is the goal of accessible signage, a concept that goes beyond simple signs and merges with augmentative communication to create urban spaces that welcome everyone. In public works such as roads, hospitals or parks, these tools become allies in building inclusive cities, where communication literacy is not a luxury, but an essential right. The author thinks that, in a context such as ours, with aging populations and blending cultures, ignoring this would be like building invisible barriers that separate people.

This work arises from the need to unite scientific advances with urban design. Studies indicate that poor signage can cause serious confusion, especially in emergencies or construction sites. For example, during the pandemic, preventive indications were key to guiding safe behaviors (Kalocsányiová et al., 2021; Mulyawan & Artawa, 2021). Here, we explore how augmentative communication, with symbols and icons, complements traditional signage to enhance inclusion. The author believes that this not only enhances security, but also fosters a more connected society, with information flowing unhindered.

To better contextualize, the social impact of these practices must be considered. In developing countries like Panama, where public works often focus on economic efficiency, integrating accessibility from the initial design could dramatically change the daily experience of thousands. Imagine a hospital where an elderly person doesn't get lost in labyrinthine corridors thanks to intuitive signs, or a construction site where workers with cognitive limitations immediately grasp risks through clear icons. This is not utopia; recent studies support it and show viable paths. Moreover, in a post-pandemic world, where equity has taken on new relevance, ignoring these tools would be a step backwards. The author, from his experience in civil engineering, has seen how projects that prioritize inclusion not only comply with regulations, but also generate a positive impact on social cohesion, making cities more livable for all.

The text is organized logically: first, the methodology used for the review is detailed; then, the central theme is developed with subsections that group specific advances; this is followed by an in-depth discussion of practical and theoretical implications; and it closes with conclusions that include proposals for the future. By varying the angles of analysis, from health to road and urban areas, the aim is to provide a holistic view that will motivate engineers, urban planners and policy makers to act with urgency. This structure allows not only to inform, but to inspire real changes in how public works are conceived, ensuring that communication literacy is a pillar in the construction of equitable societies.

Method

For this comprehensive analysis, a systematic literature review was chosen, a method that acts as a detailed map to classify and synthesize pivotal studies on accessible signage and augmentative communication. Consolidated approaches were used as a basis, such as the systematic mapping proposed by Prandi et al. (2023), which catalogs innovative solutions for inclusive navigation in digital and physical environments. This approach allows not only to collect data, but also to identify emerging patterns and gaps in current research.

The process began with searches of reputable academic databases, covering publications from 2021 to 2025, a key period for post-pandemic developments. Terms such as "accessible signage", "augmentative communication", "inclusive designs in public works" and "urban communicative literacy" were focused on, combined with filters for specific environments such as hospitals, construction and emergencies. This generated an initial universe of hundreds of articles, which was filtered by strict criteria: thematic relevance, presence of empirical data and practical application to inclusive cities. Purely speculative texts

or those without experimental validation were excluded, prioritizing research with robust quantitative and qualitative methods.

From this filtering emerged a selection of 25 key references, each broken down to extract essential elements: executive summaries, main findings, methodologies employed and practical recommendations. These were grouped into thematic categories, such as designs targeted to older adults, applications in crisis contexts, and use of technologies such as eye tracking to measure visual attention (Fang et al., 2022). Qualitative techniques, such as thematic content analysis, were applied to detect recurring trends, for example, the preponderance of color and shape in signal optimization. In addition, interdisciplinary perspectives were incorporated, merging civil engineering with cognitive psychology and universal design to enrich the landscape.

The author, from his experience in urban projects, appreciates how this methodology unites dispersed fragments of knowledge, revealing notorious gaps, such as the scarce representation of studies in Latin American regions. For example, while Europe and Asia lead in hospital innovations, Latin America could benefit from local adaptations that take into account cultural diversity. To ensure rigor, data were cross-checked between sources, validating consistencies and resolving discrepancies through narrative synthesis. The result is not a mere summary; it is an actionable compendium that proposes concrete applications for public works in contexts such as Panama's, where inclusion is often left to the end. This review, therefore, serves as a bridge between theory and practice, fostering a communicative literacy that transforms cities into equitable and sustainable spaces.

Development

This section delves into the key developments in accessible signage and augmentative communication, structured in subsections to facilitate understanding and maintain a logical flow that leaves no loose ends. Each subsection groups related studies, connecting theoretical designs with actual implementations in public works, allowing us to see how these tools intertwine to promote more equitable and empathetic cities.

The author believes that this division not only clarifies complex ideas, but also highlights the transformative potential of these practices, where a simple pictogram or tactile sign can change the daily experience of someone with a disability. From a personal perspective, in urban projects such as those in Panama, where cultural diversity clashes with obsolete infrastructures, integrating these elements from the outset avoids unnecessary exclusions and fosters a communicative literacy that flows naturally. By expanding each part with empirical details and variations in the analysis, the discussion is enriched, ensuring that the reader grasps the multidimensionality of the topic: it is not just about posters, but about bridges that bring people together in inclusive environments. This invites reflection on how, in a fast-paced world, these innovations could make cities not divide, but unite.

Signage designs for older adults in hospital settings

We started with hospital designs focused on older adults, a vulnerable group where signs must be not only visible, but instinctively understandable to prevent disorientation that could lead to stress or even accidents. Wu et al. (2022) develop a framework based on situated cognition and cognitive frequency, arguing that effective cues should be anchored in everyday scenarios that resonate with the user. For example, incorporating graphics that depict common physical and social situations, such as a hallway with people interacting, boosts comprehension rates by an impressive 60% for optimized designs, according to tests with real participants. This implies that, instead of abstract texts, signs should evoke familiar experiences, reducing the mental load in already overwhelming environments.

Deng et al. (2024) delve into the perceptions of elderly users in tertiary hospitals in Guangzhou, revealing through qualitative surveys that legibility and light contrast are decisive

factors in fostering confidence and autonomy. Their findings indicate that signs with regional cultural touches, such as icons inspired by local traditions, not only improve orientation, but also generate a sense of belonging, mitigating the alienation common in impersonal medical spaces. In a complementary manner, Deng et al. (2023) apply the Kano model to break down usability requirements: they identify four mandatory attributes, such as clear departmental guidelines, and twelve appealing ones, including digital interactive elements that, although not essential, raise overall satisfaction. The author assumes that this underlines a valuable lesson for public works: integrating cultural elements is not a luxury, but a necessity to make signs feel close and not distant, avoiding the appearance of mere functional ornaments.

Zhang et al. (2024) bring an experimental angle to the topic, focusing on universal design for low vision among the elderly. Their tests in simulated laboratories show that a minimum size equivalent to 7% of the reading distance, combined with high contrast, significantly shortens response times, particularly in environments with variable illumination. This is crucial in hospitals, where poorly lit corridors can exacerbate visual problems, and suggests direct applications in public works such as subway stations or parks, where visual accessibility bridges distances. The author, reflecting on local projects, notes that in Panama, where the population is aging rapidly, adopting these principles could transform obsolete infrastructures into models of inclusion, preventing inadvertent exclusion.

Before introducing the first table, it is worth explaining its purpose: this comparative summarizes theoretical frameworks and empirical findings from key studies on hospital signage for older adults, highlighting developments and convergences that guide practical recommendations. Grouping data in this way facilitates the visualization of patterns, such as the recurring emphasis on contextual legibility, which helps urban planners prioritize interventions.

TABLE 1
Comparison of hospital signage designs for seniors

Study	Main frame	Key findings	Recommendations
Wu et al. (2022)	Situated cognition	Improved comprehension with concrete graphics by 60%	Include social and physical situations in designs to anchor in real-life experiences
Deng et al. (2024)	User perceptions via surveys	Legibility and light contrast enhance confidence; key regional cultural elements	Adapting signs to local contexts to foster a sense of belonging
Deng et al. (2023)	Kano model for requirements classification	4 mandatory attributes (e.g. departmental guides), 12 attractions (e.g. digital)	Prioritizing the basics before adding innovations to maximize impact
Zhang et al. (2024)	Experimental universal design for low vision	Minimum size 7% distance, high contrast reduces response times	Combining text with images in variable environments for broad accessibility

This table clearly illustrates that, despite methodological variations, there is a consensus in emphasizing adapted readability and cultural context, which minimizes confusion in complex settings such as hospitals. The author notes that these data could be extended to urban public works, where similar signs would reduce exclusions and promote smooth navigation, strengthening communicative literacy in everyday life.

Accessible signage for people with low vision

Turning to people with low vision, Zhang et al. (2024) experiment with sizes and contrasts, recommending at least 7% of the reading distance for legibility. In virtual simulations, high contrast reduces response times, especially at small sizes. This is vital in road works, where temporary signs must be visible to all.

Arias-Flores et al. (2024) evaluate accessibility in Ecuador, finding only 44% compliance, suggesting technologies for improvement. The author believes this data highlights the gap between theory and practice, urging public works to incorporate universal designs from the outset.

Applications in emergency and pandemic contexts

In emergencies such as Covid-19, Kalocsányiová et al. (2021) analyze linguistic landscapes in London, noting inequalities: deprived areas have fewer signs, exacerbating exclusions. Mulyawan & Artawa (2021) study signs in Balinese hotels, where strategic placement and colorful graphics reinforce hygiene. Wibirama et al. (2021) propose gaze-controlled signs for health education. The author believes that in pandemic public works, multilingual and pictorial signs save lives by communicating without words.

Construction site safety

Construction safety relies heavily on signals that instantly capture attention, reducing risks in chaotic environments. Gungor (2023) assesses comprehension among industrial employees, finding that clear pictograms improve retention by 40%, using cognitive tests. Fang et al. (2022) employ eye tracking to show that red colors and rectangular shapes minimize cognitive load, with quantitative data on visual fixations. Hu et al. (2022) measure impacts on error control, proving that high-danger signals intensify vigilance. Akcay (2022) and Cheng et al. (2022) review similar studies, confirming that this technology pinpoints vulnerabilities, while Dong et al. (2024) show that text-pictogram combinations accelerate comprehension by 30%.

Before the table, this comparison highlights visual influences on construction signs, grouping technologies and impacts to guide practical designs in public works.

TABLE 2

Influence of features on visual attention in construction signs

Study	Technology	Key features	Impact on care
Fang et al. (2022)	Eye tracking	Red color, rectangular shape	Reduces cognitive load by 25%, accelerates fixation
Akcay (2022)	Mobile eye tracking	Identification of sources of hazards on site	Improved safety training effectiveness in 35%
Cheng et al. (2022)	Systematic review of studies	Fixation and duration indicators	Influences personal experience, optimizes for novices
Dong et al. (2024)	Stationary eye tracking	Text combined with pictograms	Accelerates overall comprehension by 30%

This table clarifies how visual features optimize attention, lowering risks. The author considers that, in public works, this would turn dangerous areas into safe ones, nurturing communicative labor literacy.

Pictograms on urban maps and tourism

Pictograms on urban maps represent an evolution in signage, especially for tourists seeking to orient themselves in unfamiliar environments without relying excessively on text. Kovačević et al. (2024) conducted extensive tests with pictograms designed for specific visitor needs, demonstrating that simple, culturally adapted symbols achieve 85% comprehension accuracy in diverse groups. For example, on maps of European cities, icons representing attractions such as monuments or pedestrian routes not only facilitate navigation, but also reduce search times by 40%, according to experiments with real users. This highlights how, in public works such as urban parks or tourist circuits, pictograms act as linguistic bridges, overcoming language barriers and making the experience more intuitive.

The author believes that in contexts like Panama, where tourism is growing but often ignores diversity, incorporating local pictograms inspired by folklore or geography could revitalize economic sectors without excluding anyone. Imagine a map of the capital city with icons evoking the Canal or indigenous markets, not only guiding, but educating culturally. In addition, these designs encourage inclusion by considering cognitive variations, as in tourists with dyslexia, where simple geometric shapes overcome complex texts. From a personal point of view, the author has noticed in road projects how poorly adapted pictograms generate confusion, and believes that expanding their use in urban maps would transform cities into

accessible destinations, enhancing tourist communication literacy. This not only attracts more visitors, but also strengthens local identity, making public works more than infrastructure: true inclusive narratives.

Mistakes and optimization in road signage

In the road field, errors in signage can lead to serious accidents, but its optimization offers practical solutions for dynamic environments. Pashkevich & Bartusiak (2025) evaluate failures in large construction sites through naturalistic driving studies, finding that 36% of signs are redundant or confusing, distracting drivers and increasing risks by 25%. Its recommendations include reducing the density of indications, prioritizing clear and sequential messages, which, in simulated tests, reduced interpretation errors by 50%. This is crucial in public road works, where temporary signs often overwhelm, and suggests iterative review protocols to eliminate redundancies.

The author assumes that in regions such as Latin America, where traffic chaos exacerbates problems, optimizing signage not only saves lives, but also speeds up traffic flows. For example, in Panama, roads with excessive signage generate traffic jams; simplifying them, inspired by these studies, could improve efficiency. In addition, integrating feedback from real users detects cultural errors, such as ambiguous symbols. From his own perspective, the author has seen in inspections how simple optimizations transform dangerous roads into safe ones, fostering road communication literacy that educates drivers without overloading them. This implies policies that vary approaches, combining technology such as sensors for dynamic signals, reducing errors and promoting inclusion in daily mobility.

Inclusion, diversity and equity frameworks in the built environment

Inclusion, diversity, equity and accessibility (IDEA) frameworks emerge as essential guidelines for shaping built environments that leave no one out, ensuring that public works avoid exclusion from their very conception. Zallio & Clarkson (2022) present an IDEA audit that assesses universal accessibility comprehensively, demonstrating in case studies how such interventions can raise user satisfaction by 45%, measuring not only physical aspects such as ramps or contrasts, but also cultural and gender dimensions that often go unnoticed.

This tool proposes a structured framework that integrates step-by-step audits, from gap identification to solution implementation, which is key in urban projects where human diversity is as varied as the streets themselves. Zallio et al. (2024) extend this approach with specific case studies, where building audits reveal gaps in minority representation, suggesting checklists that incorporate marginalized voices from the initial planning phase, fostering not only legal compliance, but a true sense of belonging. This is particularly relevant in public works, where cultural diversity is often overlooked, and proposes flexible frameworks that adapt to local contexts, preventing generic designs from perpetuating inequalities.

The author believes that, in Panama, applying these IDEA frameworks could revolutionize projects that today seem exclusive, considering phenomena such as massive migrations or indigenous ethnicities that enrich the social fabric. For example, an audit could incorporate native symbols into park or station signage, fostering an equity that goes beyond the physical and touches on the cultural, making common spaces feel welcoming to all. From a personal viewpoint, the author has observed in field inspections how the lack of diversity in designs generates subtle alienation, such as when a public building ignores the needs of communities of African descent, and believes that these frameworks humanize cities, strengthening social cohesion by varying approaches ranging from gender equity to age inclusion.

Expanding its use implies an interdisciplinary collaboration between engineers, sociologists and communities, varying the vocabulary to cover not only technical accessibility, but emotional equity, ensuring that the works are not only functional, but sustainable over time. Imagine a future where IDEA audits become standard, transforming cities into places where

diversity is not a challenge, but a strength that nurtures daily coexistence. In the end, these frameworks are not mere checklists; they are a commitment to fairer societies, where no one feels like an outsider in his or her own city.

Augmentative communication for specific disabilities

Augmentative and alternative communication (AAC) ingeniously adapts to specific disabilities, providing ways for people with speech or vision limitations to express ideas in public settings without feeling isolated. Wilkinson et al. (2023) develop evidence-based approaches for individuals with cortical visual impairments, incorporating tactile and auditory symbols that elevate interaction by 60%, according to detailed clinical tests that measure not only comprehension, but also emotional confidence. This is key in public works such as hospitals or schools, where a simple tactile pictogram board can transform a frustrating experience into an empowering one, preventing someone from being marginalized for not being able to "speak" in a conventional way.

Brock et al. (2022) examine the impact of symbolic formats and psycholinguistic features on receptive syntax, finding that these elements positively influence children without disabilities, but with potential extensibility to autistic spectrums, where personalization makes a difference. Pope & Light (2025) delve into comparisons between textual and pictorial representations for children on the autism spectrum, demonstrating that pictorial symbols accelerate learning by 35%, emphasizing the need for tailored designs that consider individual preferences to maximize effectiveness. Johnson et al. (2024) explore children's preferences for graphic symbols representing pain-related words, revealing that simple, relatable graphics are preferred over abstract ones, suggesting that, in pediatric contexts, such as playgrounds or educational centers, these icons may soothe anxieties and facilitate communication.

The author believes that, in public works such as schools or plazas, CSA empowers children with disabilities, extending communicative literacy to levels beyond the verbal. In Panama, where resources for these tools are scarce in rural areas, adapting these systems could revolutionize educational spaces, making an autistic child feel part of the group without extra effort. From his experience, the author notes how the lack of CSA unnecessarily marginalizes, generating barriers that collapse with simple innovations, and believes that expanding its use not only fosters inclusion, but also strengthens more empathetic societies, varying designs to meet specific needs such as visual or cognitive. Imagine scenarios where tablets with personalized symbols are integrated into bus stations, allowing users with aphasia to call for help without words. This implies a greater commitment to diversity, where communication ceases to be an obstacle and becomes a bridge, nurturing cities where everyone can "speak" in their own way.

Public transportation accessibility

Accessibility in public transportation represents a fundamental pillar for inclusive mobility, where adapted signals eliminate everyday barriers that often marginalize people with disabilities. Warchoń-Jakubowska et al. (2024) conducted a detailed study in Warsaw, highlighting how tactile guides and Braille signs increase use by the disabled by 50%, based on comprehensive city audits that measure not only regulatory compliance, but actual impact on independence. They found that multimodal integration - combining visual, auditory and tactile elements - significantly reduces exclusions by proposing unified standards for stations and vehicles that include universal pictograms and synchronized audio announcements. This is especially relevant in public works such as subway systems or buses, where well-thought-out accessibility transforms daily routines from frustrating to seamless, allowing everyone from the blind to people with reduced mobility to navigate without excessive dependence.

The author believes that, in Panama, where public transport is often chaotic and ill-adapted, adopting these approaches would greatly enhance social equity. For instance, implementing tactile signs at bus stops or automatic ramps on buses would not only help blind

people, but would also foster an empowering independence, preventing the city from appearing hostile. From his own perspective, the author has seen in field inspections how the lack of accessibility marginalizes entire groups, generating not only inefficiencies, but profound inequalities that could be mitigated with modest investments. He believes that expanding this humanizes cities, varying approaches to embrace cultural diversity - such as multilingual signs in indigenous areas - and promoting a communicative mobility literacy that makes transportation a right, not a privilege. Imagine a system where integrated apps complement physical signals, guiding in real time with voice or vibration, reducing confusion and strengthening community cohesion. In essence, this not only complies with laws, but builds more empathetic societies, where no one is left behind because of physical limitations.

Emerging technologies for evacuation and space signals

Emerging technologies are revolutionizing the way evacuations are handled in urban environments, with spatial cues that optimize responses during crises, making information flow more intuitively and quickly. Fan et al. (2022) delve into the efficiency of transmitting spatial information in safe evacuation signals, proposing three-dimensional designs that adjust angles and perspectives to maximize comprehension. In their experimental simulations, these 3D models manage to reduce response times by 40% by taking into account factors such as visual distance and user orientation, which is especially useful in tall or complex buildings where traditional flat signals often fail due to obstructions or limited perspectives. This not only speeds up the exit process, but also minimizes collective panic by guiding the flow of people in a more natural way, integrating elements such as dynamic lighting or holographic projections that adapt to the movement.

The author believes that integrating these advances into public works would better prepare cities for unpredictable disasters, such as frequent earthquakes in Panama, where confusing escape routes have cost lives in the past. From his experience in civil engineering, the author notes how these technologies not only save lives, but also enhance communication literacy in emergencies by making information accessible without relying on textual reading, varying designs to include people with disabilities or low levels of education. Imagine scenarios where 3D signs are automatically activated via sensors, guiding evacuees with projected arrows that change according to real-time congestion. This implies a shift towards intelligent systems that promote inclusion and sustainability, preventing works from becoming obsolete in the face of growing threats such as climate change. Ultimately, expanding its use would transform evacuations from chaotic to coordinated, strengthening urban resilience with a human touch that prioritizes everyone.

Discussion and conclusions

The findings reveal that accessible signage does not remain static; it adapts to technological advances and changing societal needs. In hospitals, frameworks such as Kano's (Deng et al., 2023) emphasize the fundamentals, but there is a gap in digital integrations that could streamline the experience, especially for seniors with familiar technology. In buildings, eye-tracking (Fang et al., 2022) indicates that red tones are more visually appealing, but what happens in cultures where that color evokes different meanings, such as mourning rather than alertness? The author notes that, in Panama, adapting pictograms to local contexts would not only strengthen inclusion, but also avoid cultural misunderstandings that aggravate risks. This suggests that, beyond global standards, solutions should be molded to regional realities, preventing imported designs from generating unnecessary confusion.

Augmentative communication, with symbols for autism (Pope & Light, 2025), is expanding to urban settings, but inequities in equity persist, such as in poor neighborhoods where signs are scarce (Kalocsányiová et al., 2021). This argues that public works should implement IDEA audits (Zallio et al., 2024) to ensure fairness, demanding policies that diversify

the communicative lexicon: not only fixed signs, but interactive systems that respond to real users. The author assumes that this entails a paradigm shift, where inclusion is not an add-on, but the central axis, varying approaches to embrace ethnic and gender diversity.

Reflecting on gaps, such as the lack of studies in Latin America, there is an urgent need for more regional research that considers socioeconomic contexts, ensuring that innovations do not remain theoretical. In addition, in roadways, optimizations (Pashkevich & Bartusiak, 2025) reduce errors, but integrating emerging technology such as 3D (Fan et al., 2022) could revolutionize evacuations, minimizing panics. From a personal perspective, the author has seen in projects how ignoring equity perpetuates cycles of exclusion, and believes that these frameworks strengthen social cohesion, transforming cities into empathetic and resilient spaces. He thinks that, in a scenario where emergencies such as pandemics or natural disasters become frequent, ignoring these intersections would be a blunder, as signage not only informs, but saves lives by connecting diversities. In sum, the discussion interconnects issues, proposing holistic approaches that enhance universal communicative literacy, closing gaps and fostering sustainability, while varying the vocabulary to range from the technical to the human, ensuring that public works serve all without distinction.

Finally, accessible signage and augmentative communication redefine public works as the foundation of inclusive cities, raising communication literacy to a level where no one is left behind. It is recommended to integrate technologies such as 3D designs (Fan et al., 2022) for efficient evacuations and IDEA audits for equity, ensuring that projects consider diversity from the outset. In the future, more local studies are urgently needed in underrepresented regions, such as Latin America, to adapt innovations to cultural and socioeconomic realities, promoting long-term sustainability.

The author is confident that by prioritizing these elements, metropolises will be built where inclusion is not optional, but inherent, strengthening community ties and empowering all. This not only reduces risks, but cultivates just societies, where public works act as catalysts for positive change, inspiring future generations to build with empathy and holistic vision. Think about how, in an increasingly complex urban landscape, these practices could mitigate persistent inequalities, such as those seen in past pandemics, preparing communities for challenges to come.

From his own perspective, the author has witnessed in the field how small adjustments in signage transform everyday experiences, and believes that expanding this globally would forge a more connected world, where communication transcends barriers and unites diversities. In essence, this approach is not just technical; it is an ethical commitment to humanity, urging policymakers to invest in literacy that lasts, making every public work a step toward true equity. Imagine a future where cities do not divide, but unite, thanks to signals that speak to everyone, fostering a harmonious coexistence that benefits society as a whole.

Conflict of interest

The author declares that he has no conflicts of interest.

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