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Explorando la intersección entre tecnologías IA y alfabetización mediática en personas de edad avanzada: Una revisión sistemática de investigaciones

Exploring the intersection between AI technologies and media literacy in older adults: A systematic research review

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RESUMEN

Este trabajo plantea una revisión sistemática de investigaciones relacionadas con la aplicación de la inteligencia artificial (IA) en personas mayores dentro de contextos educativos y comunicativos. Siguiendo las directrices del protocolo PRISMA 2020, se analizaron 15 estudios seleccionados en las bases de datos de alto impacto académico WoS, Scopus, EBSCO, ERIC y Dialnet Plus, publicados entre 2015 y 2024. Los hallazgos evidencian la limitada producción científica en el ámbito de la educomunicación relacionada con IA y personas mayores, lo que pone de manifiesto la necesidad de ampliar la investigación en este campo. Entre las oportunidades futuras se encuentran el diseño de aplicaciones adaptativas de inteligencia artificial, programas específicos de alfabetización mediática y el desarrollo de agentes conversacionales que optimicen las estrategias de intervención educativa con personas de edad. No obstante, la persistencia de la brecha digital y la discriminación por edad dificultan una integración efectiva de la IA.

PALABRAS CLAVE

Inteligencia artificial; personas mayores; alfabetización mediática; investigación.

ABSTRACT

This paper presents a systematic review of research exploring the utilisation of artificial intelligence (AI) in the context of education and communication for older adults. In accordance with the PRISMA 2020 protocol, a total of 15 studies, published between 2015 and 2024, were selected for analysis from the WoS, Scopus, EBSCO,

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ERIC and Dialnet Plus databases. The findings indicate a paucity of scientific output in the field of educommunication pertaining to AI and older people, underscoring the need for an expansion of research in this domain. Potential avenues for future inquiry include the design of adaptive AI applications, the development of targeted media literacy programmes, and the creation of conversational agents to enhance the efficacy of educational intervention strategies with older people. However, the persistence of the digital divide and ageism impede the effective integration of AI.

KEYWORDS

Artificial intelligence; older people; media literacy; research.

1. INTRODUCTION

The convergence of two global phenomena, namely the emergence of artificial intelligence (AI) and population ageing, gives rise to an unprecedented set of challenges and opportunities in a number of spheres of society. AI is transforming such sectors as education, health and social relations (Brynjolfsson & McAfee, 2017) whilst demographic ageing highlights the need to adapt these technologies to the particularities of older people (United Nations, 2020).

Artificial intelligence (AI) has a considerable impact on the ageing population, offering solutions that enhance quality of life and promote independence. An example is AI-powered systems, such as the Internet of Medical Things, which facilitate real-time health monitoring and risk prediction for older individuals (Vasudevan et al., 2024). In the field of education, artificial intelligence technologies are transforming the processes of teaching and learning. Such applications enable educators to provide personalised recommendations, improve student engagement and facilitate real-time feedback (Hamdi, 2024; Nkechi et al., 2024). AI facilitates inclusive education by addressing learning disparities, overcoming language barriers and providing assistive technologies to learners with functional diversity (Torres et al., 2023; Alves et al., 2024). However, programmes developed utilising artificial intelligence may potentially compromise users' privacy and introduce biases, therefore responsible implementation is called for (Santos & Ferreira, 2024).

Older people encounter considerable obstacles in adopting AI. The digital divide restricts access to and effective utilisation of these technologies (Seol, 2024), while digital ageism perpetuates negative stereotypes about their technological capabilities and precludes inclusive design (Chu et al., 2022; van Kolfschooten, 2023).

The existence of age-related biases results in older individuals frequently perceiving themselves as inadequately prepared to utilise technologies, largely due to the unavailability of educational resources (Shandilya & Fan, 2022). Furthermore, there is a concern that these technologies may outsmart their users, infringe upon their privacy, or undermine their decision-making capacity. All this has led to conflicting perceptions of AI as a useful tool but also as a potential adversary (Boot, 2022). The existence of a digital divide, coupled with the prevalence of inequality and digital ageism, underscores the necessity for strategies that holistically address these challenges. In this context, media literacy emerges as a crucial factor.

The term "media education" encompasses a broader concept that involves collaboration between educators and communicators with the objective of developing digital competencies that enable individuals to analyse and create content, thereby fostering a critical and responsible attitude in a participatory process (Osuna-Acedo et al., 2018). This approach is particularly pertinent in digital learning environments with older people, where interaction processes must be adapted to enhance practices (Chiappe et al., 2020).

The incorporation of AI into educational settings has the potential to enhance digital literacy among the elderly by offering personalised learning experiences and prompt feedback in natural language. This scenario is exemplified in educational settings where AI tools such as Chat-

GPT or voice chatbots are employed (Leong et al., 2023). However, media literacy is not solely confined to the educational domain; it also encompasses cultural and social dimensions that facilitate older individuals' comprehension and utilisation of artificial intelligence as a means to enhance their subjective well-being (Yang & Chun, 2024).

1.1 Gaps in the state of the art

Despite the potential attributed to AI as an educommunicative agent for different age groups, there is a paucity of academic research on the intersection of these areas. The general bibliographic corpus analysed reveals a prevalence of studies focusing on health (Velázquez-Díaz et al., 2023), which reflects a predominant association between older people and medical services. This perspective, although relevant, tends to reduce the heterogeneity of this collective, ignoring dimensions such as learning, participation and technological integration.

The dearth of research on AI, older people and educommunication can be attributed to a number of key factors. The elderly are underrepresented in academic research, partly due to exclusion at the data collection stage (Khalili-Mahani & Sawchuk, 2022). Conversely, the digital divide and disparate levels of literacy present challenges to the inclusion of this demographic in research. Moreover, the design of AI interfaces and systems tends to prioritise younger demographic groups (Sarcar et al., 2024). These factors underscore the necessity for inclusive and representative research.

2. OBJECTIVES

The overarching objective of the systematic review of research is to examine and evaluate academic literature on the utilisation of artificial intelligence for older individuals in educational settings.

The following specific objectives derive from this central objective:

- SO1. To identify trends and the principal areas of research knowledge that have been published in high-impact journals.
- SO2. The aim is to draw attention to the most significant findings of the research reviewed.
- SO3. The aim is to identify the limitations and opportunities provided by the intersection of disciplines, namely majors, AI and educommunication.

3. METHODOLOGY

A systematic review was proposed to conduct this research. This method enables the identification, analysis and interpretation of scientific production within a specific field, as determined by systematic processes (Codina, 2020a, b). The study was conducted in accordance with the PRISMA 2020 statement (Page et al., 2022), which provides a framework for addressing research questions and guiding the review process. That includes the identification of information sources, the establishment of eligibility criteria, the development of search strategies, the selection of studies, the analysis of data, and the organisation of findings in a systematic manner (Sánchez-Serrano et al., 2022).

3.1. Research questions

The following areas have been considered under the headings of elderly people, artificial intelligence, education, and media: The following six areas were identified as providing a comprehensive overview of the object of study: temporal prevalence, geolocation, authorship and areas of origin, objectives, methodological design and methods, and relevant results. Additionally, research questions related to these areas were posed and are listed in Table 1.

Table 1. Research questions associated with the areas of study.

Areas	Research questions
Domain 1	Q1. What is the prevalence of papers published between 2015 and 2024?
Domain 2	Q2. What is the geographical origin, authorship and field of expertise?
Domain 3	Q3. What are the research objectives?
Domain 4	Q4. What research design and methods have been implemented?
Domain 5	Q5. What notable results have been obtained?
Domain 6	Q6. What limitations and opportunities are observed?

Source: Created by the author.

3.2. Search strategy and admissibility criteria

The Web of Science (WoS), Scopus and Dialnet Plus databases were consulted to ensure a systematic search. WoS and Scopus were selected on the basis of their international recognition as sources of high-impact, high-quality publications. Dialnet Plus was included in the search strategy due to its extensive collection of studies within the Ibero-American context, which provides valuable insight into the regional perspective. A further search was conducted in the EBSCO and ERIC databases. EBSCO was included to ensure comprehensive coverage of studies in the social sciences and humanities, while ERIC was included due to its specialisation in education-related content.

In order to optimise the search, two sets of terms with Boolean operators were used: 'older adults' OR elderly OR 'senior citizens' AND education OR 'lifelong learning' OR media AND 'artificial intelligence' OR AI. Inclusion and exclusion criteria were also established in order to identify research that provided direct evidence for the objectives of this review (Kitchenham & Charters, 2007).

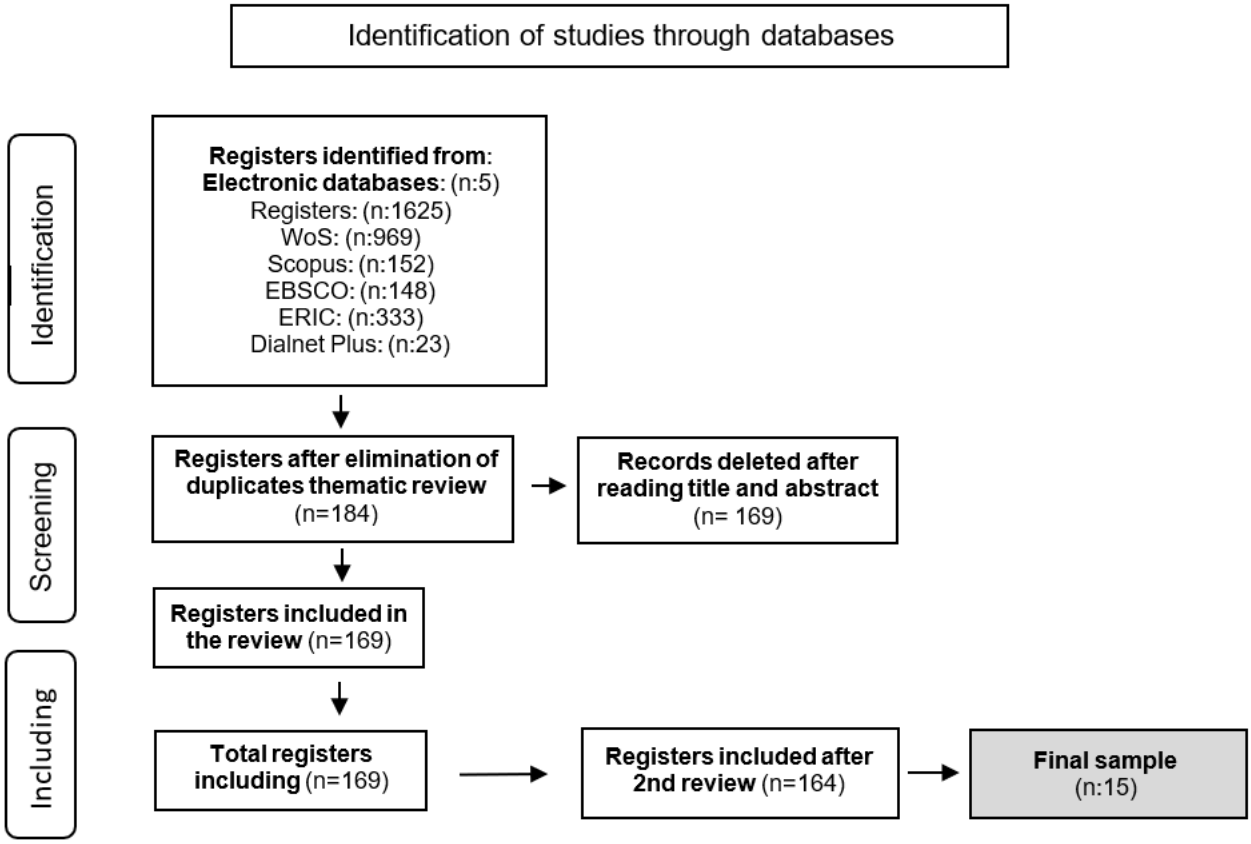
The inclusion and exclusion criteria were as follows:

- The subject matter of this research is the relationship between AI and older people for the purposes of education and teaching. Excluded from this study are those studies which did not comply with this approach.
- The publications in question are open access research articles that have been peer-reviewed and published in high-impact academic journals.
- The period under consideration is 2015 to 2024, in order to ensure the timeliness of the data, with previous studies excluded.
- The papers were published in English or Spanish. Studies published in languages other than English and Spanish were excluded from the review as they represented very small samples.
- Methodology: qualitative, quantitative and mixed-methods studies, as well as systematic reviews. Studies employing inadequate methodologies, non-representative samples, and an absence of rigorous analysis were excluded.

The data was organised in an analysis sheet created in a matrix format using Google Sheets. The sheet permitted the data from each study to be structured in a uniform manner, thereby facilitating the identification of patterns, notable results, gaps and opportunities for further research.

The filtering process yielded a total of 1,625 documents, which were distributed as follows: The WoS database yielded 969 documents, while Scopus, EBSCO, ERIC and Dialnet Plus contributed 152, 148, 333 and 23 documents, respectively. In the initial phase of the review, duplicates were removed. Subsequently, the study titles and abstracts were analysed based on the pre-established inclusion and exclusion criteria. A total of 15 studies were included in the final sample for review. Finally, a comprehensive and systematic reading of the research was conducted. Flowchart 1 provides a summary of the sample selection phases.

Figure 1. Study selection procedure according to PRISMA.



Search process using the PRISMA protocol. Created by the author.

4. RESULTS OF THE RESEARCH

4.1. Time prevalence of publications

The analysis of the time prevalence of publications reveals that the majority of papers published between 2015 and 2024 were released in the last four years (2021-2024). The period in question demonstrates fluctuating production, with no discernible trend of increase or decrease in the number of publications. A notable increase in interest is apparent in 2021, with a total of eight papers published. In contrast, in 2024, only four publications were found. The intermediate years, 2022 and 2023, reflect a decline in research activity, with two and one paper published, respectively.

This analysis reveals the recent but significant attention that researchers have devoted to the topic and highlights the importance of continuing to monitor the trend to determine whether this area of research will keep up this level of interest in future years.

4.2. Authorship, geographical location and disciplinary field

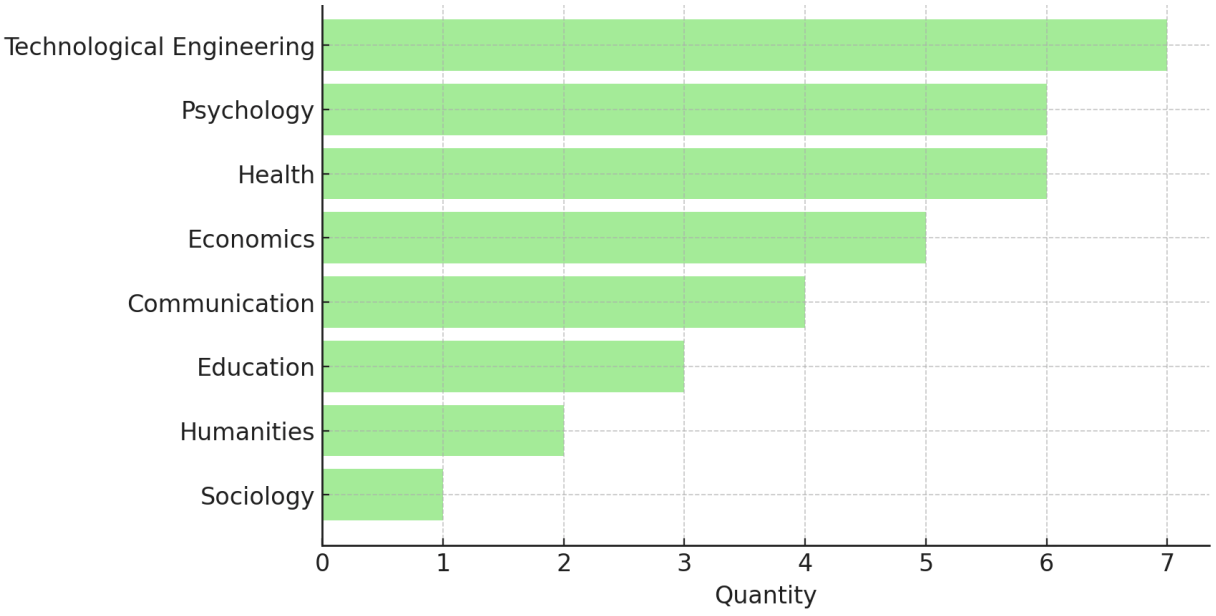
Co-authored research is the predominant form in the sample under review, accounting for 87 % of the papers. Within this group, seven studies were conducted by teams of more than three authors, while three other studies were completed by two or three authors. A mere two of the fifteen studies (13 %) were conducted by a single author, indicating a marked proclivity for collaborative research.

In terms of gender, the analysis reveals a balanced participation, with 48.3% of authors being female (29 in total) and 51.7% male (31 in total). It is notable that a significant proportion of the studies were led by women, with 10 out of the 15 investigations analysed being led by female researchers. This represents 66.7% of the total number of papers led, in contrast to the 33.3% led by male researchers. Furthermore, female leadership is evident in single-authored research, with both papers written by women. When analysing the relationship between leadership and total participation, it is notable that women assumed leadership roles to a greater extent, which highlights their impact on the development of this research.

The research has a geographically distributed origin, encompassing eleven countries. The United States accounts for 25% of the studies (4 studies), while Europe contributes 37.5%. Spain leads the way with three studies, followed by the United Kingdom, Romania and Switzerland, each with one study. Additionally, the Eastern region accounts for 37.5% of the research papers, with Taiwan, Thailand, Japan, and China each contributing a single study. Additionally, the United Arab Emirates and India contribute one research paper each.

With regard to the disciplinary approach, 53% of the studies were conducted by multidisciplinary teams, while 47% employed a single disciplinary perspective. As illustrated in Graph 1, the proportion of studies originating in the field of communication and education is relatively modest. This is due to the fact that other disciplines, such as health sciences and engineering, have assumed a dominant position in the intersection of higher education, AI and teaching. Nevertheless, research that does not originate in the fields of education and communication is still related to this area, thereby underlining the convergence of disparate fields. Furthermore, interactions and synergies are established between researchers from different disciplines and geographical areas. For example, in the research led by Choudrie et al. (2021), British researchers from the University of Hertfordshire and the University of York collaborate with Indian researchers from the Symbiosis Centre for Applied Artificial Intelligence and the Symbiosis Institute of Technology of Pune. These co-authorship networks represent a crucial element in enhancing the visualisation of collaborative endeavours aimed at surmounting digital barriers and fostering the development of inclusive technological solutions tailored to the specific needs of older individuals.

Graph 1. Distribution of areas of expertise.



Source: Created by the author.

4.3. Objectives of the investigations

A number of studies have examined the use of chatbots as educational tools (Leong, Sung, & Jones, 2023). In a study conducted by Sriwisathiyakun and Dhamanitayakul (2022), a chatbot was employed to assist older individuals in Thailand in adapting to digital environments and enhancing their autonomy. Lin, Chen and Yueh (2021) investigate methods for enhancing older individuals' accessibility and satisfaction with learning technologies, specifically focusing on error management strategies in voice interfaces.

Conversely, Li Xiao (2024) examines the adaptation of educational resources to the requirements of the elderly with the objective of enhancing the learning experience. The work of Bogoslov, Corman and Lungu (2024) provides insight into the uptake of AI among older people in the European Union. It highlights the importance of digital skills for the integration of older people into the digital society, which is a crucial aspect of the process.

In the field of digital inclusion and entertainment, some studies look into the use of chatbots designed to interact with users through the provision of informational and recreational content. García-Méndez et al. (2021) developed the EBER chatbot, an 'intelligent radio' designed to provide entertainment for individuals with abstraction difficulties. De Arriba-Pérez et al. (2021) develop a news chatbot that not only provides information, but also assesses the cognitive abilities and emotional state of users through sentiment analysis. Choudrie et al. (2021) developed a chatbot that provides real-time information on prevention and treatment of the novel coronavirus (2019-nCoV). Wang et al. (2021) analysed the differences in processing of misinformation related to the novel coronavirus between machine learning systems and that performed by older adults, addressing the risks associated with the spread of misinformation.

In the field of healthcare, a voice chatbot has been developed with the objective of providing pharmacological information and assisting the elderly in the administration of medication (Gudala et al., 2022). Finally, Miran, Dinh and Joo-Ho (2021) present an assistive training robot that simulates three-dimensional facial expressions of pain, with the objective of enhancing the training of nursing students.

Some studies concentrate on enhancing the communication and psychosocial abilities of the elderly. The Aging and Engaging programme enables older individuals to hone their abilities in areas such as maintaining eye contact and conveying facial expressiveness (Ali et al., 2021). In a recent study, Kamali et al. (2023) examined the impact of utilising multiple interfaces on the relationship between the elderly and a virtual coach (eCoach). Strategies to diminish loneliness among the elderly have also been considered. Alzyoudi and Al Mazroui (2024) assess the potential of ChatGPT to alleviate social isolation. Dosovitsky and Bunge (2021) evaluate the efficacy of a chatbot designed to mitigate loneliness based on the psychological consequences of social distancing during the pandemic.

4.4. Methodologies and methods used in the studies

The majority of studies (87%) employ mixed methodology. In contrast, the use of quantitative and qualitative approaches is less prevalent, with only one study utilising each approach. The corpus of mixed-method research includes the work of Choudrie et al. (2021), which employs machine learning in conjunction with qualitative interviews to examine how older individuals process information regarding the Coronavirus Disease 2019 (Covid-19) pandemic. Ali et al. (2021) conducted a pilot study utilising role-playing games and questionnaires to assess the communication skills of the participants. In their study, Bogoslov, Corman and Lungu (2024) employed a bibliometric analysis in conjunction with Hofstede's cultural theory to investigate the influence of cultural dimensions on the adoption of AI. Finally, Lin, Chen and Yueh (2021) applied self-efficacy scales and interviews to explore the perceptions of elderly people with regard to interacting with voice chatbots.

In contrast, quantitative studies concentrate on the gathering of statistical data through the utilisation of structured questionnaires or experiments. In their 2021 study, García-Méndez and colleagues employed survey methodology to examine the relationship between demographic variables and user satisfaction with a chatbot. In a similar vein, Kamali et al. (2023) employed both surveys and controlled experiments to assess the interaction of the elderly with AI devices.

Qualitative studies have been proposed as a means of gaining a detailed understanding of the experiences of older people, primarily through the use of interviews and focus groups. Gudala et al. (2022) conducted interviews with geriatric experts to gain insight into the medical information needs of older individuals. Sriwisathiyakun and Dhamanitayakul (2022) employed focus groups to study the digital literacy of older individuals in Thailand. Dosovitsky and Bunge (2021) utilised thematic analysis to examine users' interactions with a chatbot, complemented by keyword analysis to explore emotional expectations and perceptions of support for loneliness.

4.5. Notable research contributions

The field of artificial intelligence has yielded significant findings with regard to its application to older users. These studies indicate that this population group tends to rely on traditional media sources, often encountering challenges in differentiating between factual and non-factual online information (Choudrie et al., 2021). It is therefore pertinent to develop digital literacy programmes, particularly in crisis situations where misinformation can have significant consequences. To address the literacy gap (Sriwisathiyakun & Dhamanitayakul, 2022), conversational agents represent an effective tool for facilitating learning, as evidenced by the reviewed research.

The introduction of robots offers a realistic experience for future caregivers of the elderly in the field of assistance and healthcare training (Chang et al., 2021). Nevertheless, the deployment of AI as a training agent calls for dedication to digital inclusion and the adaptation of interfaces to align with the user's level of technical expertise.

Artificial intelligence techniques, such as sentiment analysis (Moral-Sánchez et al., 2023) and natural language generation, should be employed to facilitate accessible and satisfactory interactions for older users (García-Méndez et al., 2021). Furthermore, the incorporation of error management strategies, such as confirmation prompts and suggestions, is recommended to enhance the user experience. The work of Lin, Chen & Yueh (2021) in this area provides a framework for the design of voice interfaces tailored to the elderly population. The potential of AI as a mediator of social interaction, which contributes to well-being and mental health, is evident (Gudala et al., 2022; Alzyoudi & Al Mazroui, 2024). In any case, the development of artificial intelligence tools must prioritise the needs of elderly users.

4.6. Study limitations and opportunities

The research sample included in this systematic review is subject to a number of limitations that affect both the validity and generalisability of its findings. Methodological challenges have been encountered, such as the use of controlled environments, which render it challenging to extrapolate results to real-world situations, particularly in the context of technologies such as chatbots (Chang et al., 2021). Moreover, numerous research studies employ cross-sectional methodologies, which impede the establishment of causal relationships and, consequently, limit their capacity to provide a comprehensive understanding. That is exemplified by the analysis of ChatGPT and social support in older adults (Alzyoudi & Al Mazroui, 2024).

A further significant limitation is the lack of diversity in the samples, as is the case in studies focused on specific populations (relatives of people with Alzheimer's disease), which restricts the applicability of the results to other groups. Similarly, the insufficient sample size observed in the study by Gudala et al. (2022) constrains the generalisability of the findings.

A further limitation arises from technological constraints, particularly when research necessitates the use of specific software and hardware configurations. Furthermore, ethical concerns pertaining to the utilisation of technologies such as facial recognition present significant challenges in relation to privacy and security.

Notwithstanding such limitations, the research uncovers significant potential for future development. The opportunity exists for interdisciplinary and international research collaboration to contribute to the development of comprehensive and context-specific solutions. In terms of user experience, one of the key opportunities lies in the implementation of research on adapting AI to the specific needs

and digital competence levels of older users. This would enhance accessibility and usability for this demographic. Additionally, ethical concerns pertaining to privacy, such as those associated with facial recognition and sentiment analysis, require attention (Flores-Vivar & García-Peñalvo, 2023). In the domain of education, prospects are identified for the deployment of experimental research in the creation of digital literacy programmes utilising technologies such as chatbots.

5. DISCUSSION AND CONCLUSIONS

Overall, in addressing Specific Aim 1 (trends and areas of knowledge), an increase in publications has been observed in recent years, reflecting a growing awareness of the importance of including older people in the development and application of AI technologies in educational contexts. However, the fluctuation in the number of studies indicates that this interest has not yet been consolidated in the global research agenda. This is in accordance with the findings of Khalili-Mahani and Sawchuk (2022), who emphasise the underrepresentation of older adults in academic research. Conversely, the geographical distribution of the studies demonstrates a diverse range of locations, with a notable concentration in developed countries, particularly the United States and Spain. This phenomenon may be associated with the accessibility of technologies in the northern and southern hemispheres, as well as the digital inclusion policies and initiatives implemented in developed and developing countries.

The prevalence of multidisciplinary teams and female leadership in the research is a positive phenomenon that enhances the focus of the studies and fosters diversity in knowledge generation. Conversely, a relatively low percentage of research has been conducted in the fields of communication and education, indicating that these disciplines have yet to fully explore the potential of AI in addressing the needs of older people. This finding is consistent with the observations of Munteanu et al. (2024), who note that the design of AI systems tends to prioritise younger populations. However, there is evidence of multidisciplinary collaboration between areas of health and engineering with education and communication. This result reinforces the transversality and permeability that educommunicators attribute to media literacy.

The work in question primarily concerns the examination of digital literacy, social inclusion and emotional support for older people through the medium of artificial intelligence. The studies demonstrate that AI-based tools, such as chatbots and conversational agents, can facilitate learning. The successful integration of AI in the teaching and learning process with older people is contingent upon the utilisation of natural language, encompassing both written and spoken forms. Nevertheless, it is essential to ensure that these applications are tailored to the specific requirements and capabilities of the demographic in order to ensure their efficacy.

Methodologically, the studies reviewed predominantly employ mixed approaches to conduct comprehensive analyses of the interactions between the elderly and AI. However, the restricted diversity of samples and the technological constraints identified in several studies restrict the external validity of the findings. It is therefore essential to design research with larger and more diverse samples. Within this diversity, it is crucial to consider the heterogeneity of older people in terms of digital skills, socio-cultural contexts and interests.

Notable research contributions (Specific Aim 2) include evidence that AI can act as an effective educommunicative agent, facilitating digital literacy and promoting the emotional well-being of older people. These findings are consistent with those of previous studies that have highlighted the potential of AI to improve the quality of life and social participation of this collective (Yang & Chun, 2024). However, significant limitations are also identified, such as the digital divide and the risks associated with users' privacy and security. These are aspects that require priority attention for the responsible implementation of the technologies (Santos & Ferreira, 2024). In this context, the development of adaptive AI applications for older people, addressing specific needs such as interface personalisation, error management, and improvements in accessibility and privacy, should be considered as future opportunities. Furthermore, digital, media and algorithmic literacy programmes, as well as conversational agents in health and education, are promising areas for improving the quality of life of the elderly.

This review identifies a gap in research on the intersection between AI, older people and educommunication. That presents an opportunity to explore new lines of research which address the educational and communicational needs of this group. It would be beneficial to consider prospective research into the experiences, perceptions and opinions of older people with regard to AI. Moreover, it is essential to conduct applied research that incorporates educational-communicative strategies that integrate AI in an inclusive and ethical manner, adapting technological tools to align with the capabilities and requirements of the elderly. Furthermore, it emphasises the necessity of confronting digital ageism and advocating for an age-sensitive approach in the conceptualisation and realisation of AI systems. Ultimately, age-conscious (and intergenerational) research is regarded as a crucial undertaking to guarantee the involvement of older individuals in all stages of research design. This entails interdisciplinary collaboration involving educators, communicators, technologists and older people in the creative and research process.

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BIBLIOGRAPHICAL REFERENCES

Ali, R., Hoque, E., Duberstein, P., Schubert, L., Razavi, S. Z., Kane, B., Silva, C., Daks, J. S., Huang, M., & Van Orden, K. (2021). Aging and Engaging: A pilot randomized controlled trial of an online conversational skills coach for older adults. *American Journal of Geriatric Psychiatry*, *29*(8), 804-815. https://doi.org/10.1016/j.jagp.2020.11.004

Alves, D. L. de L., Esprendor, A., Rodrigues, A. C. R. da L., Eccel, Á. S., Nunes, D. P. de L. M., & Malta, D. P. de L. (2024). Impacto da inteligência artificial na educação inclusiva. *Revista Ilustração*. https://doi.org/10.46550/ilustracao.v5i7.346

Alzyoudi, M., & Al Mazroui, K. (2024). ChatGPT as a coping mechanism for social isolation: An analysis of user experiences and perceptions of social support. *Online Journal of Communication and Media Technologies*, *14*(3), e202433. https://doi.org/10.30935/ojcmt/14617

Bogoslov, I. A., Corman, S., & Lungu, A. E. (2024) Perspectives on Artificial Intelligence Adoption for European Union Elderly in the Context of Digital Skills Development. *Sustainability*, *16*(11):4579. https://doi.org/10.3390/su16114579

Boot, W. (2022). Artificial intelligence and robotic approaches to supporting older adults. *Innovation in Aging*, *6*(Supplement_1), 70. https://doi.org/10.1093/geroni/igac059.278

Chiappe, A., Amado, N., & Leguizamón, L. (2020). Educommunication in digital environments: An interaction's perspective inside and beyond the classroom. *Innoeduca*, *6*(1), 45–60. https://doi.org/10.24310/INNOEDUCA.2020.V6I1.4959

Choudrie, J., Banerjee, S., Kotecha, K., Walambe, R., Karende, H., & Ameta, J. (2021). Machine learning techniques and older adults processing of online information and misinformation: A COVID-19 study. *Computers in Human Behavior*, *119*, 106716. https://doi.org/10.1016/j.chb.2021.106716

Chu, C. H., Leslie, K., Shi, J., Nyrup, R., Bianchi, A., Khan, S., Rahimi, S., Lyn, A., & Grenier, A. (2022). Ageism and artificial intelligence: Protocol for a scoping review. *JMIR Research Protocols*, *11*(6), e33211. https://doi.org/10.2196/33211

Chu, C. H., Nyrup, R., Leslie, K., Shi, J., Bianchi, A., Lyn, A., McNicholl, M., Khan, S., Abbasgholizadeh, S., Rahimi, S., & Grenier, A. (2022). Digital ageism: Challenges and opportunities in artificial intelligence for older adults. *The Gerontologist*, *62*(7), 947–955. https://doi.org/10.1093/geront/gnab167

Codina, L. (2020a). Revisiones sistematizadas en ciencias humanas y sociales. 3: Análisis y síntesis de la información cualitativa. En C. Lopezosa, J. Díaz-Noci & L. Codina (Eds.), *Anuario de métodos de investigación en comunicación social* (n.º *1*, pp. 73-87). DigiDoc-Universitat Pompeu Fabra. https://doi.org/10.31009/methodos.2020.i01.07

Codina, L. (2020b). Revisiones sistematizadas en ciencias humanas y sociales. Segunda parte: Búsqueda y evaluación. En C. Lopezosa, J. Díaz-Noci & L. Codina (Eds.), *Anuario de métodos de investigación en comunicación social* (n.º *1*, pp. 61-72). DigiDoc-Universitat Pompeu Fabra. https://doi.org/10.31009/methodos.2020.i01.06

de Arriba-Pérez, F., García-Méndez, S., González-Castaño, F. J., & Costa-Montenegro, E. (2021). Evaluation of Abstraction Capabilities and Detection of Discomfort with a Newscaster Chatbot for Entertaining Elderly Users. *Sensors*. *21*(16):5515. https://doi.org/10.3390/s21165515

Dosovitsky, G., & Bunge, E. L. (2021). Bonding With Bot: User Feedback on a Chatbot for Social Isolation. *Digit. Health*, *3*:735053. doi: 10.3389/fdgth.2021.735053

El Kamali, M., Angelini, L., Lalanne, D., Abou Khaled, O., & Mugellini. E. (2023) Older adults' perspectives on multimodal interaction with a conversational virtual coach. *Comput. Sci*, *5*:1125895. https://doi.org/10.3389/fcomp.2023.1125895

Flores-Vivar, J., & García-Peñalvo, F. (2023). Reflections on the ethics, potential, and challenges of artificial intelligence in the framework of quality education (SDG4). *Comunicar*, *74*, 37-47. https://doi.org/10.3916/C74-2023-03

García-Méndez, S., de Arriba-Pérez, F., González-Castaño, F. J., Regueiro-Janeiro, J. A., & Gil-Castiñeira, F. (2021). Entertainment Chatbot for the Digital Inclusion of Elderly People Without Abstraction Capabilities, *IEEE Access*, *9*, 75878-75891. https://doi.org/10.1109/ACCESS.2021.3080837

Gudala, M., Ross, MET., Mogalla, S., Lyons, M., Ramaswamy, P., & Roberts, K. (2022). Benefits of, Barriers to, and Needs for an Artificial Intelligence–Powered Medication Information Voice Chatbot for Older Adults: Interview Study With Geriatrics Experts, *JMIR Aging*, *5*(2):e32169. https://doi.org/10.2196/32169

Khalili-Mahani, N., & Sawchuk, K. (2022). Double-bind of recruitment of older adults into studies of successful aging via assistive information and communication technologies: Mapping review. *JMIR Aging*. https://doi.org/10.2196/43564

Kitchenham, B., & Charters, S. (2007). Guidelines for performing systematic literature reviews in software engineering (EBSE Technical Report EBSE-2007-01). *Keele University and Durham University*. https://doi.org/10.5281/zenodo.6634100

Leong, K., Sung, A., & Jones, L. (2023). The core technology behind and beyond ChatGPT: A comprehensive review of language models in educational research. *IJERI: International Journal of Educational Research and Innovation*, (*20*), 1–21. https://doi.org/10.46661/ijeri.8449

Lin, W., Chen, H-C., & Yueh, H-P. (2021). Using Different Error Handling Strategies to Facilitate Older Users' Interaction With Chatbots in Learning Information and Communication Technologies. *Psychol*, *12*:785815. https://doi.org/10.3389/fpsyg.2021.785815

Martínez-Roig, R. (2024). Social robots, music, and movement: Older people's perceptions of the Pepper training robot. *Pixel-Bit: Revista de Medios y Educación*, *70*, 1-31. https://doi.org/10.12795/pixelbit.104621

Mcdonald, S., & Moher, D. (2021). Declaración PRISMA 2020: Una guía actualizada para la publicación de revisiones sistemáticas. *Revista Española De Cardiología*, *74*(1), 790–799. https://doi.org/10.1136/bmj.n71

Miran, L., Dinh Tuan, T., & Joo-Ho, L. (2021). 3D Facial Pain Expression for a Care Training Assistant Robot in an Elderly Care Education Environment. *Frontiers in Robotics and AI*, *8*. https://doi.org/10.3389/frobt.2021.632015

Moral-Sánchez, S. N., Ruiz Rey, F. J., & Cebrián-de-la-Serna, M. (2023). Analysis of artificial intelligence chatbots and satisfaction for learning in mathematics education. *IJERI: International Journal of Educational Research and Innovation*, (*20*), 1–14. https://doi.org/10.46661/ijeri.8196

Munteanu, C., Sarcar, S., Sin, J., Wei, C. Z., Sayago, S., Zhao, W., & Waycott, J. (2024). Designing age-inclusive interfaces: Emerging mobile, conversational, and generative AI to support interactions across the life span. *MobileHCI '24 Adjunct: Adjunct Proceedings of the 26th International Conference on Mobile Human-Computer Interaction*, *32*, 1–5. https://doi.org/10.1145/3640471.3680460

Osuna-Acedo, S., Frau-Meigs, D., & Marta-Lazo, C. (2018). Educación mediática y formación del profesorado. *Revista Interuniversitaria de Formación del Profesorado*, *31*(3), 35–49.

Page, M. J., Mckenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjarts son, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., Mcdonald, S., & Moher, D. (2021). Declaración PRISMA 2020: Una guía actualizada para la publicación de revisiones sistemáticas. *Revista Española De Cardiología*, *74*(1), 790–799. https://doi.org/10.1136/bmj.n71

Sánchez-Serrano, S., Pedraza-Navarro, I., & Donoso-González, M. (2022). ¿Cómo hacer una revisión sistemática siguiendo el protocolo PRISMA? Usos y estrategias fundamentales para su aplicación en el ámbito educativo a través de un caso práctico. *Bordón: Revista de Pedagogía*, *74*(3), 51-66. https://doi.org/10.13042/Bordon.2022.8583045

Santos, M. do S. P. dos, & Ferreira, J. da C. (2024). Transformação educacional: Investigando os impactos da inteligência artificial na pedagogia e aprendizado. *Revista Contemporânea*, *4*(5), e4294. https://doi.org/10.56083/RCV4N5-072

Seol, J. (2024). An exploratory study on digital information education for active seniors: Focusing on those with digital media production training experience. 노년교육연구, *10*(1), 38. https://doi.org/10.31748/kseg.2024.10.1.38

Shandilya, E., & Fan, M. (2022). Understanding older adults' perceptions and challenges in using AI-enabled everyday technologies. *Proceedings of the ACM on Human-Computer Interaction*, *6*(CSCW2), 1–18. https://doi.org/10.1145/3565698.3565774

Sriwisathiyakun, K., & Dhamanitayakul, C. (2022). Enhancing digital literacy with an intelligent conversational agent for senior citizens in Thailand. *Educ Inf Technol*. *27*, 6251–6271. https://doi.org/10.1007/s10639-021-10862-z

United Nations. (2020). World population ageing 2020 highlights: Living arrangements of older persons. Department of Economic and Social Affairs, Population Division. https://www.un.org/development/desa/pd/news/world-population-ageing-2020-highlights

Van Kolfschooten, H. (2023). The AI cycle of health inequity and digital ageism: Mitigating biases through the EU regulatory framework on medical devices. *Journal of Law and the Biosciences*, *10*(2), lsad031. https://doi.org/10.1093/jlb/lsad031

Vasudevan, V., Mohan, U., & Mohan, S. (2024). AI-powered Internet of Medical Things for monitoring elderly adults in independent living environments. In S. Pradhan & M. N. Ghosh (Eds.), *Artificial Intelligence in Medicine* (pp. 295–313). CRC Press. https://doi.org/10.1201/9781032698519-21

Velázquez-Díaz, D., Arco, J., Ortiz, A., Pérez-Cabezas, V., Lucena-Antón, D., Moral-Muñoz, J., & Galán-Mercant, A. (2023). Use of artificial intelligence in the identification and diagnosis of frailty syndrome in older adults: Scoping review. *Journal of Medical Internet Research*, *25*, e47346. https://doi.org/10.2196/47346

Wang, X., Liang, T., Li, J., Roy, S., Pandey, V., Du, Y., & Kong, J. (2021). Artificial Intelligence-Empowered Chatbot for Effective COVID-19 Information Delivery to Older Adults. *International Journal of E-Health and Medical Communications (IJEHMC)*, *12*(6), 1-18. http://doi.org/10.4018/IJEHMC.293285

Xiao, L. (2024). Research on Practical Innovation of Elderly Education Service System in the Era of Artificial Intelligence. *Applied Mathematics and Nonlinear Sciences*, *9*(1). https://doi.org/10.2478/amns-2024-2071

Yang, H., & Chun, B. K. (2024). Experience of the elderly participating in digital use education. *Korean Association for Computing Machinery*. https://doi.org/10.38019/kacm.15.1.307