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The Role of Plain Language Summaries in the Context of Knowledge Sharing: A Systematic Literature Review

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Abstract
Plain Language Summaries (PLS) are used to increase the readability and public accessibility of research findings, making them highly relevant within knowledge sharing (KS) practices. This study conducted a Systematic Literature Review (SLR) using the Scopus database to identify the roles of PLS in KS and the technologies utilized in their creation. Article selection followed the PRISMA framework, resulting in 24 eligible studies. Data were extracted and synthesized using Microsoft Excel. The findings indicate that PLS play a critical role in simplifying scientific information, enhancing comprehension, expanding dissemination reach, and strengthening user engagement. Additionally, eight categories of technologies were identified, including readability tools, machine learning, large language models, knowledge translation platforms, and multimedia production tools. Overall, PLS serve as a strategic instrument for cross-audience knowledge transfer and require strengthened standards and governance of technological tools to ensure their quality and effectiveness.

Keywords: *plain language summary, PLS, systematic literature review, knowledge sharing*

Introduction

Academic publications often pose significant challenges due to their complex language and specialized terminology that are primarily accessible to experts, especially for readers outside the scientific community (Stoll et al., 2024). Empirical studies demonstrate that scientific writing, particularly in the health sciences, has become increasingly difficult to read, with declining levels of readability over time (Bralić et al., 2024). Similar findings have been reported in psychology, where academic publications are generally difficult for lay audiences to understand (Stricker et al., 2020). Compared to the abundance of digital information offering instant access and higher readability, academic articles often appear less engaging and less accessible to non-specialist readers (Stoll et al., 2024). This situation suggests that while scholarly articles are familiar to academic communities, their direct benefits are less perceptible to the public.

Researchers are therefore encouraged to communicate scientific information in language that is accessible to broader audiences to optimize the societal impact of their research (Kirkpatrick et al., 2017). Plain Language Summaries (PLS) have been widely introduced as a means of bridging the knowledge gap between experts and the public (Stricker et al., 2020) by presenting scientific information in a more comprehensible textual form (Stoll et al., 2024). Studies indicate that PLS play a crucial role in expanding access to research findings and improving reader comprehension, particularly because they are written in clear, concise language and avoid excessive technical jargon that may hinder understanding (Suart et al., 2020). Comparative analyses between scientific abstracts and PLS consistently show that PLS achieve higher readability levels, making them more effective in facilitating communication between scientists and the public (Stricker et al., 2020).

PLS are relevant to the knowledge sharing (KS) process within the context of knowledge management (KM), which involves making individual knowledge accessible and usable by others. Through this process, knowledge is transformed into forms that can be understood, absorbed, and applied by different audiences (Agrifoglio, 2015). In addition, PLS align with the internalization phase of Nonaka's SECI model (1994), whereby explicit knowledge, such as scientific summaries is learned through everyday practices, including reading, and subsequently transformed into new tacit knowledge (Agrifoglio, 2015). Therefore, PLS plays a strategic role in ensuring that scientific knowledge can be processed and utilized more widely by society.

Although the benefits of PLS have been increasingly recognized, research that systematically maps the role of PLS in the context of knowledge sharing (KS) and the technologies used in their development remains relatively limited. Therefore, this study conducts a Systematic Literature Review (SLR) to analyze the role of PLS and to identify the technologies and tools involved in knowledge production within knowledge-sharing practices.

This study aims to examine the role of PLS in supporting knowledge sharing and to identify the types of technologies used in the creation of PLS.

RQ1: What is the role of Plain Language Summaries in the context of knowledge sharing?

RQ2: What types of technologies or supporting tools are used in the creation of Plain Language Summaries?

Method

This study adopts a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize research related to the use PLS and to relate these findings to theoretical perspectives that explain knowledge sharing, as well as to identify the technologies and tools used in the creation of PLS. SLR is an approach used to systematically summarize and organize large bodies of information, thereby enabling researchers to address various research questions, including those concerning the effectiveness of an intervention and other related issues (Petticrew & Roberts, 2006). This method also serves to map areas of uncertainty and to identify research gaps, thus highlighting fields that require further investigation (Petticrew & Roberts, 2006). The SLR method was selected because it offers a systematic, transparent, and replicable procedure for searching, selecting, and integrating findings from previous studies.

Scopus is a database that provides broad, multidisciplinary, and well-curated coverage of academic literature. It offers access to high-quality journal articles from various fields relevant to the topic of PLS, including science communication, health, psychology, information technology, and knowledge sharing. The rigorous curation standards applied by Scopus ensure that indexed articles have undergone a peer-review process, thereby enhancing the credibility and validity of the findings synthesized in this article.

The article's searching technique is using keywords from Boolean combination and the search strings used to collect relevant articles are as follows:

- plain language summary OR lay summary OR easy summary OR non-technical summary
- knowledge dissemination OR knowledge sharing OR science communication OR research communication OR knowledge translation

(("plain language summary" OR "lay summary" OR "easy summary" OR "non-technical summary") AND ("knowledge dissemination" OR "knowledge sharing" OR "science communication" OR "research communication" OR "knowledge translation")). All the results are exported into CSV format to complete further analysis.

Selection criteria were established to identify articles that were relevant and capable of addressing the research questions. The authors defined the inclusion and exclusion criteria as outlined below, resulting in a final set of 51 articles selected for further analysis.

Table 1. Criteria of inclusion and exclusion in article selection

Inclusion	• articles published between 2015 and 2025 • discussing PLS as the main subject • peer-reviewed articles • articles available in full text • written in English
Exclusion	• published prior to 2015 • articles do not address the research questions • document type other than journal articles • articles not accessible in full text • written in languages other than English • Articles or authors affiliated with institutions involved in international human rights violation

Data extraction and analysis were conducted after all articles had undergone the screening stages based on the PRISMA framework. The initial search of the Scopus database yielded 70 articles. After refining the search to English-language journal articles published between 2015 and 2025, 51 articles remained for further screening. No duplicate records were identified at this stage; therefore, all 51 articles proceeded to full-text assessment. Of these, four articles were excluded due to inaccessibility despite their topical relevance, resulting in 47 articles being assessed for eligibility.

The 47 articles that passed the identification stage were subsequently screened based on their relevance to the two research questions concerning the role of Plain Language Summaries (PLS) in knowledge management (RQ1) and the technologies or tools used in the creation of PLS (RQ2). Based on this assessment, 25 articles were categorized as included, as they directly addressed PLS, the development or evaluation of PLS, PLS-based knowledge translation platforms, or technologies in the

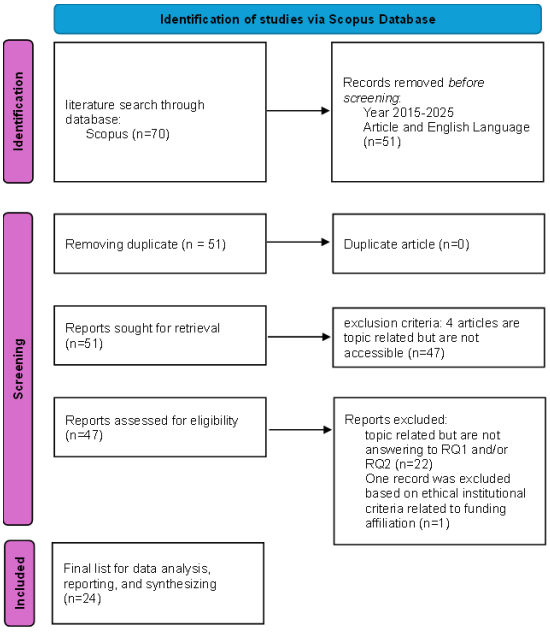

Figure 1. PRISMA 2020 Framework in search strategy

creation of PLS. The remaining 22 articles were excluded due to the absence of substantive relevance to PLS or to technologies and tools for simplifying scientific communication.

A risk-of-bias assessment was conducted by reviewing the institutional affiliations of the articles and their funding sources, including potential involvement in programs with explicit geopolitical mandates or specific national interests. Based on this review, one article was identified as having funding affiliations explicitly aimed at advancing the agenda of a particular entity. To maintain the ethical integrity of the study and to ensure that this review does not contribute to the legitimization of the associated institution, the article was excluded from the analysis. Consequently, a total of 24 articles were included in the final stage for further data processing using Microsoft Excel.

Results and Discussion

Based on the selection process conducted, a total of 24 articles were identified as relevant, as presented below:

Table 2. A total of 24 selected articles based on inclusion criteria

Article Codification	Title	Penulis	Tahun
A1	Comparative usability analysis and parental preferences of three web-based knowledge translation tools: Multimethod study	Anzinger et al.	2020
A2	Capacity building for knowledge translation: A survey about the characteristics and motivation of volunteer translators of Cochrane plain language summaries	Behmen et al.	2019
A3	Conclusiveness, readability and textual characteristics of plain language summaries from medical and non-medical organizations: a cross-sectional study	Bralić et al.	2024
A4	Online dissemination of Cochrane reviews on digital health technologies: a cross-sectional study	de Santis et al.	2024
A5	Dissemination of knowledge from Cochrane Public Health reviews: a bibliographic study	Helmer et al.	2023
A6	Equivalent user experience and improved community augmented meta-analyses knowledge for a new version of a Plain Language Summary guideline	Jonas et al.	2024
A7	How best to share research with study participants? A randomised crossover trial comparing a comic, lay summary, and scientific abstract	Kearns et al.	2022
A8	A Randomized Controlled Study on the Effectiveness of Plain Language Summaries of Psychological Meta-Analyses Targeting Knowledge, User Experience, Relevance, and Trust	Kerwer et al.	2025
A9	How to Put It Plainly? Findings From Two Randomized Controlled Studies on Writing Plain Language Summaries for Psychological Meta-Analyses	Kerwer et al.	2021
A10	Jargon and Readability in Plain Language Summaries of Health Research: Cross-Sectional Observational Study	Lang et al.	2025

A11	From complexity to clarity: How AI enhances perceptions of scientists and the public's understanding of science	Markowitz	2024
A12	Communicating evidence-based information on the effects of health interventions to various types of recipients – a qualitative study on the perception of formats of information among lay and professional audiences	Prokop-Dorner et al.	2024
A13	Harnessing generative artificial intelligence to support nature-based solutions	Richards et al.	2024
A14	A new dimension of simplified science communication: the easiness effect of science popularization in animated video abstracts	Salzmann et al.	2025
A15	Evaluating the Capability of Large Language Model Chatbots for Generating Plain Language Summaries in Radiology	Sarangi et al.	2025
A16	Envisioning the scientific paper of the future	Sopinka et al.	2020
A17	User Feedback on Plain Language Summaries: A Qualitative Study in a German General Population Sample	Stoll et al.	2024
A18	Scientific abstracts and plain language summaries in psychology: A comparison based on readability indices	Stricker et al.	2020
A19	Development of a knowledge translation platform for ataxia: Impact on readers and volunteer contributors	Suart et al.	2020
A20	Exploring the use and usefulness of living guidelines for consumers: international online survey of patients' and carers' views	Synnot et al.	2025
A21	Master protocol for a series of cohort-based randomized controlled trials to test tools to communicate research results to study participants and others with relevant lived experience: the SPIN-CLEAR Trials	Thombs et al.	2025
A22	A protocol for co-creating research project lay summaries with stakeholders: Guideline development for Canada's AGE-WELL network	Wada et al.	2020
A23	User experience with plain language summaries of psychological systematic reviews with meta-analysis (“KLARpsy” texts) – A qualitative study using the think aloud method Nutzer*innenerfahrung mit allgemeinverständlichen Kurzzusammenfassungen psychologischer systematischer Übersichtsarbeiten mit Metaanalyse („KLARpsy“-Texte) – eine qualitative Studie mit der „Lautes Denken“-Methode	Weber et al.	2025

A24	Supporting patient and public partners in writing lay summaries of scientific evidence in healthcare: A scoping review protocol	Zarshenas et al.	2022

The graph below indicates that the publications analyzed in this study are predominantly concentrated within the last five years (2020–2025), despite the ten-year search window. This pattern suggests that research on PLS in the context of knowledge dissemination, knowledge sharing (KS), and knowledge management (KM) is a relatively recent area of inquiry. The increase in publications after 2020 aligns with growing attention to research transparency, public engagement, and the need to accelerate knowledge dissemination in the digital era, with the most notable surge occurring between 2023 and 2025.

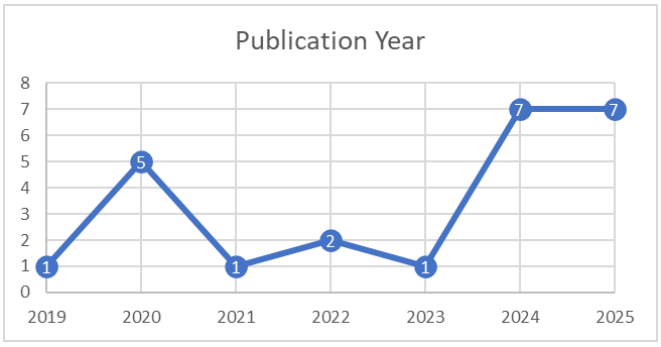

Figure 2. Publication Year

This temporal distribution reflects a shift in how knowledge is managed and shared. PLS, which were initially positioned merely as complementary elements of academic publications, are increasingly being adopted as structured mechanisms within knowledge dissemination practices. Recent studies demonstrate a transition from a sole focus on language simplification toward the use of PLS as strategic tools for supporting knowledge sharing, particularly through user experience approaches, user interaction models, and the adoption of technologies such as artificial intelligence. Overall, this trend highlights the emerging strategic role of PLS in bridging knowledge producers and users and in supporting more inclusive, credible, and publicly responsive scientific communication.

The distribution of journals indicates that research on PLS is not confined to a single discipline but is spread across various reputable international journals, including BMJ Open, Journal of Clinical Epidemiology, Journal of Medical Internet Research, Scientific Reports, and PLOS ONE, all of which are indexed in higher quartiles (Q3–Q1). Publications in these journals demonstrate that topics related to PLS and their roles in knowledge management (KM) practices are increasingly attracting scholarly attention, particularly within the fields of health, psychology, scientific communication, and environmental studies.

Table 3. Journal Distribution

No	Journal Title	Total Article	Quartal Index
1	Annals of Agricultural and Environmental Medicine	1	Q3
2	BMJ Open	1	Q1
3	Facets	1	Q1
4	Fachsprache	1	Q1
5	Frontiers in Psychology	2	Q2
6	iRADIOLOGY	1	Q3

7	Journal of Clinical Epidemiology	1	Q1
8	Journal of Evidence-Based Medicine	1	Q1
9	Journal of Medical Internet Research	2	Q1
10	Journal of Visual Communication in Medicine	1	Q2
11	People and Nature	1	Q1
12	PLOS ONE	3	Q1
13	PNAS Nexus	1	Q1
14	Research Involvement and Engagement	1	Q1
15	Scientific Reports	1	Q1
16	Systematic Reviews	2	Q1
17	Trials	1	Q1
18	Zeitschrift fur Evidenz, Fortbildung und Qualitat im Gesundheitswesen	1	Q1
19	Zeitschrift fur Psychologie / Journal of Psychology	1	Q1
	Total	**24**	

The representation of Q1 and Q2 journals suggests that research on PLS has gained recognition as a strategically relevant topic within knowledge sharing (KS). This pattern of publication in well-established journals indicates that PLS is increasingly regarded as a legitimate methodological approach for improving accessibility, accountability, and the societal impact of scientific research.

The subject distribution indicates that research on PLS is predominantly published in medicine (16 articles), followed by psychology (4 articles), and smaller number of studies in the social sciences, agriculture, and environmental sciences. The high volume of articles in medical and psychological disciplines reflects a high need for knowledge dissemination mechanisms capable of bridging the complexity of scientific evidence with the understanding of the public, patients, or other non-expert stakeholders. In these fields, PLS function as a tool to strengthen knowledge sharing (KS) practices, enabling health-related information, behavioral insights, and research findings to be accessed, understood, and applied, particularly in decision-making contexts.

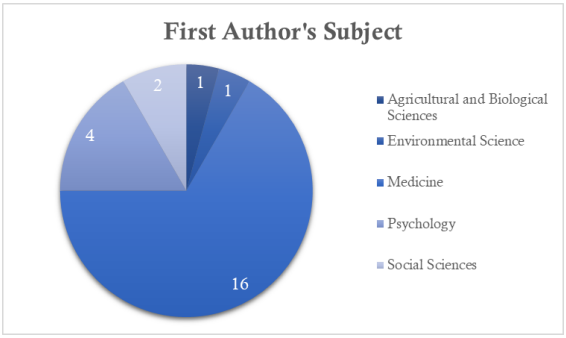

Figure 3. Subject of the First Author

Meanwhile, studies on PLS in other fields such as the social sciences, agriculture, and environmental sciences indicate that PLS are beginning to be more widely adopted to simplify cross-domain knowledge, particularly in public issues that emphasize community engagement.

The methodologies used across the 24 analyzed articles include text analysis and readability studies (quantitative), surveys and bibliographic/altmetric studies, experimental designs (RCTs and crossover trials) and user experience (UX) studies, as well as qualitative studies and co-creation protocols. These

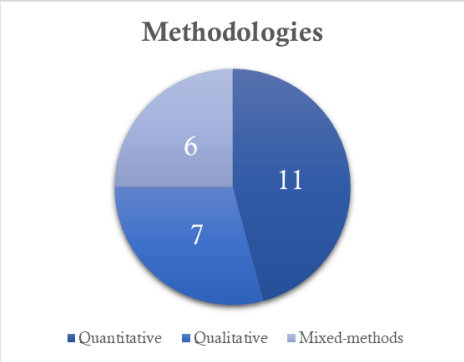

Figure 4. Methodologies used in selected articles

diverse research approaches are intended to address different aspects of the role of PLS in the context of knowledge sharing (KS) and to identify the technologies used in the development of PLS.

Quantitative approaches, such as text analysis and readability studies, are used to map the quality of PLS in terms of readability, jargon use, and textual emotionality, and to provide objective evidence that many PLS remain difficult to read without intervention. This justifies the use of support tools such as readability formulas, jargon detectors, and automation as potential solutions. Meanwhile, survey-based and bibliographic/altmetric studies assess dissemination reach and strategies, including the roles of translation, social media, and Altmetric indicators, showing that the availability of PLS in multiple languages and their distribution through non-academic channels can increase visibility, although this does not always reflect the quality of accessibility.

Qualitative approaches, including qualitative studies and co-creation protocols, offer contextual insights into audience needs, format preferences, and best practices in PLS development. In this regard, qualitative research highlights the importance of stakeholder involvement in knowledge sharing (KS) practices.

Mixed-method approaches, such as experimental designs (RCTs and crossover trials) and user experience (UX) studies, evaluate PLS in comparison with other formats in terms of comprehension, trust, and behavioral change. These approaches provide experimental evidence supporting the view that PLS and alternative formats, such as comics or videos, can enhance user understanding and preferences.

The geographical distribution indicates that research on PLS is concentrated in developed countries, particularly Germany (9 articles) and Canada (4 articles), as well as contributions from the United States, Croatia, and New Zealand. These countries demonstrate a particular interest in the role of PLS in strengthening knowledge sharing (KS) practices, particularly through the development of writing

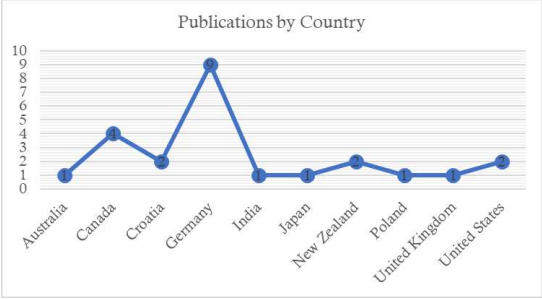

Figure 5. Publications by Country

standards, evaluations of PLS effectiveness, and testing of alternative formats such as video abstracts, comics, and blogshots.

In addition, regions that are actively investigating technologies for PLS development such as Canada, Germany, India, and the United States also show a clear focus on automation, text-mining–based readability evaluation, and the exploration of Large Language Models in the process of simplifying scientific information. This suggests that these countries are not only concerned with accessibility, but also investing in technological innovation to enhance the efficiency of PLS production and its quality within contemporary KS contexts.

By contrast, the relatively limited contributions from countries such as Japan, Poland, Australia, and the United Kingdom point to a geographical gap in the adoption and study of PLS. Although these countries have produced publications on the topic, they have not yet emerged as consistent research hubs for PLS or its supporting technologies. This highlights significant opportunities for cross-national research collaboration and capacity building, particularly in regions such as Asia, Africa, and Latin America, which remain underrepresented. These patterns also underscore the need for global standards and international cooperation to ensure that PLS, as a knowledge dissemination mechanism, can be implemented more evenly and inclusively worldwide.

RQ1: The Role of Plain Language Summary (PLS) in the context of Knowledge Sharing (KS)

The analysis of the selected articles indicates that PLS plays a role in knowledge management practices, particularly in the areas of knowledge sharing and knowledge internalization. The role of PLS in knowledge sharing can be synthesized into five main aspects: enhancing readability and comprehension, expanding the reach and visibility of research, serving as a tool for social participation and co-creation, influencing information acceptance, and promoting the standardization of scientific communication. Table 4 presents the key findings related to the roles of PLS synthesized from the 24 selected articles.

Table 4. Key Findings related to RQ1

The Main Role of PLS in KS	Article Code	Brief Summary
Enhancing readability and comprehension of scientific knowledge	A1	Shows that PLS improves parents' understanding compared with conventional scientific formats through usability testing.
	A3	Analyzes the readability and linguistic characteristics of PLS, affirming its function as a mediator of comprehension.
	A7	RCT evidence shows that PLS is easier for research participants to understand than scientific abstracts.
	A8	Experimentally demonstrates that PLS enhances readers' knowledge and comprehension.
	A9	Shows that the structure of PLS and the explanation of jargon significantly affect understanding.
	A10	Identifies the role of PLS in reducing jargon and linguistic complexity in health information.
	A11	Indicates that simplified summaries (including AI-generated ones) improve public understanding.
	A18	Comparisons of readability indices demonstrate that PLS is easier to understand than scientific abstracts.

The Main Role of PLS in KS	Article Code	Brief Summary
	A23	Think-aloud studies show that PLS supports the internalization of explicit knowledge.
Expanding the reach and visibility of research	A2	PLS is translated by volunteers, thereby expanding cross-language reach.
	A4	PLS increases the dissemination of Cochrane reviews across digital and non-academic channels.
	A5	Shows that PLS serves as a primary channel for distributing public health knowledge.
	A16	Positions PLS as a strategic element in the future of open scientific publishing.
	A19	PLS-based knowledge translation platforms expand patient community access to research.
	A20	PLS supports consumers' and caregivers' understanding of guidelines.
	A21	PLS is used to return research results to study participants.
Serving as a tool for social participation and co-creation	A2	PLS is produced through volunteer translator participation as a form of collaborative knowledge sharing.
	A12	Audience perceptions highlight the importance of PLS formats that are responsive to user needs.
	A17	Public involvement in PLS evaluation increases relevance and information acceptance.
	A22	PLS is developed through co-creation with stakeholders.
	A24	PLS is positioned as the outcome of collaboration among patients, the public, and researchers.
Influencing trust, user experience, and decisions regarding information acceptance	A1	PLS user experience influences parents' preferences and trust in health information.
	A6	PLS improves user experience without reducing perceived information quality.
	A8	PLS structure affects users' epistemic trust and perceived relevance.
	A11	Simplified summaries increase perceptions of scientists' credibility.
	A14	Identifies the easiness effect: understanding increases, but critical evaluation may decline.
	A17	User trust is influenced by transparency and the linguistic style of PLS.
Promoting the standardization of scientific communication practices	A6	Develops empirically based guidelines for PLS.
	A9	Provides experimental evidence for standardized PLS writing practices.
	A16	Positions PLS as a normative practice in future scientific publishing.
	A21	Uses PLS as a baseline tool in RCT protocols for research communication.
	A22	Establishes co-creation protocols as standards for PLS development.
	A24	Promotes the standardization of PLS writing through public engagement.

The synthesis of the 24 selected articles indicates that PLS plays a multidimensional role in knowledge sharing practices, with its most prominent contribution being the enhancement of readability and comprehension of scientific knowledge. Text analysis and experimental studies consistently demonstrate that PLS is easier to understand than scientific abstracts, particularly through the management of jargon, information structure, and linguistic clarity, which significantly influence knowledge acquisition and user experience (Stricker et al., 2020; Bralić et al., 2024; Kerwer et al., 2021). In addition, PLS has been shown to expand the reach and visibility of research through multilingual translation, dissemination via non-academic platforms, and increased altmetric attention; however, greater reach does not always correspond to higher-quality understanding among readers (de Santis et al., 2024; Helmer et al., 2023).

At the same time, PLS has evolved as a tool for social participation and co-creation by involving the public, patients, and volunteer translators in the development process, thereby enhancing relevance, trust, and acceptance (Wada et al., 2020; Behmen et al., 2019). PLS also influences user trust and experience, although excessive simplification may trigger the easiness effect and reduce critical evaluation of information (Salzmann et al., 2025). Overall, the accumulation of these findings positions PLS toward a normative role, reflected in the emergence of empirically ground guidelines and protocols that contribute to more inclusive and systematically managed standards of scientific communication.

RQ2: Technologies and Tools used in the creation of PLS

The synthesis of the selected articles identified eight categories of technologies/tools used in the process of creating PLS. This aspect is important to examine because the creation of PLS represents one of the stages discussed in knowledge management, particularly in relation to the mechanisms and tools involved in knowledge creation. Table 5 presents the results of the analysis regarding the technologies/tools used in PLS development as follows:

Table 5. Key findings related to RQ2

Technologies/ Tools	Article Code	Brief Summary
Readability tools* and *jargon-detectors	A3	Uses readability indices and linguistic analysis to assess the complexity of medical and non-medical PLS and to demonstrate disciplinary differences in writing style.
	A10	Analyzes the level of jargon and readability of health-related PLS using automated formulas to demonstrate low language accessibility.
	A18	Compares the readability of scientific abstracts and psychology PLS using multiple readability indices to demonstrate the superiority of PLS.
Machine-learning classification* dan *text-mining	A3	Applies machine learning to classify the level of conclusiveness of PLS at scale and to identify textual patterns.
Large language models (LLMS) / generative AI	A11	Tests AI-generated scientific summaries and demonstrates improvements in comprehension and perceptions of scientists' credibility.
	A13	Explores the potential of generative AI to simplify and disseminate environmental knowledge in an automated and contextualized manner.

Technologies/ Tools	Article Code	Brief Summary
	A15	Evaluates the performance of various LLMs in generating radiology PLS, with expert assessments of readability and accuracy.
Automated evaluation pipelines	A15	Combines automated readability scores with expert evaluation as an AI-based pipeline for assessing PLS quality.
Knowledge translation **platform and PLS repository**	A4	Analyzes the role of the Cochrane platform in disseminating PLS and links it to altmetric attention.
	A5	Identifies PLS as the primary channel for disseminating public health evidence through the Cochrane repository.
	A19	Evaluates the SCAsource platform as a PLS repository that enhances knowledge access for patient communities.
	A23	Uses a KLARpsy mock-up platform to test user experience with psychology PLS.
Multimedia production tools	A1	Compares web-based PLS with other formats through usability testing to assess user preferences.
	A7	Tests comics, text-based PLS, and scientific abstracts as alternative dissemination formats in a crossover RCT.
	A14	Uses animated videos as a form of PLS and identifies the easiness effect on user comprehension.
Crowdsourcing **and** ***volunteer translation workflows***	A2	Analyzes volunteer-based PLS translation as a mechanism for expanding cross-language reach.
	A22	Develops a co-creation protocol for PLS with stakeholders as a collaborative practice.
	A24	Maps support for patients and the public in writing PLS through participatory approaches.
Dissemination Analytics and Platform experiments	A4	Uses altmetrics to assess the reach and visibility of PLS in digital dissemination.
	A5	Uses bibliographic analysis to evaluate PLS dissemination strategies.
	A6	Uses UX testing to assess the effectiveness of a new PLS guideline.
	A8	Uses online RCTs to assess the impact of PLS on users' knowledge and trust.
	A21	Uses multi-country RCT protocols to test the effectiveness of various PLS-based communication tools.

The analysis of the 24 articles shows that technologies and tools used in the development of PLS have evolved from basic linguistic approaches toward more integrated systems oriented to the scalability of knowledge sharing. Readability tools and jargon detectors represent the earliest and most widely used technologies for assessing the linguistic complexity of PLS through readability indices and jargon analysis (Stricker et al., 2020; Bralić et al., 2024; Lang et al., 2025). However, the findings indicate that these metrics primarily capture surface-level textual features and do not fully represent readers'

conceptual understanding; therefore, they are more appropriate as initial screening tools rather than as determinants of final PLS quality. The application of machine learning and text-mining techniques enables large-scale analysis of PLS, including the classification of conclusiveness levels and the identification of cross-disciplinary linguistic patterns that are difficult to achieve through manual assessment (Bralić et al., 2024).

Experimental studies also demonstrate that Large Language Models (LLMs) can generate linguistically simpler summaries and improve public comprehension (Markowitz, 2024), although evaluations in medical contexts emphasize the need for human oversight to prevent factual errors and to safeguard scientific integrity (Sarangi et al., 2025; Richards et al., 2024). In addition, Knowledge Translation platforms and PLS repositories such as Cochrane, SCAsource, and KLARpsy play a crucial role in the production, distribution, and impact monitoring of PLS through altmetrics and web analytics (de Santis et al., 2024; Helmer et al., 2023; Suart et al., 2020; Weber et al., 2025). Innovations in format through multimedia production tools have been shown to enhance user engagement, but they may also trigger the easiness effect if simplification is not balanced with transparency of evidence (Kearns et al., 2022; Anzinger et al., 2020; Salzmann et al., 2025). Overall, the effectiveness of PLS technologies in the context of knowledge sharing depends heavily on the integration of automation, human evaluation, and standardized governance.

Conclusion

Based on the findings derived from the literature analysis, the following points can be concluded regarding the role of PLS in knowledge sharing practices:

1. PLS functions as a mediator that transforms tacit or highly technical outputs produced by knowledge creators into forms that can be internalized by users, which is a critical element in the knowledge sharing chain.
2. PLS broadens the distribution of scientific articles to channels that are typically not reached by academic audiences, thereby increasing the likelihood that knowledge will be used by practitioners, patients, and the public. However, expanded reach must be accompanied by high-quality presentation to ensure that subsequent use remains evidence informed.
3. Through social and participatory processes, PLS becomes part of knowledge co-production, transforming knowledge sharing from a one-way dissemination model into a dialogic process that enables feedback, adaptation, and internalization by user communities.
4. PLS must be designed with a balance between simplicity and transparency. Excessive simplification of language may enhance knowledge uptake but can reduce readers' ability to assess the strength of evidence, thereby increasing the risk of misinterpretation in practice.
5. Standardization strengthens interoperability with scientific documents, facilitating the integration of PLS into repositories, guidelines, and information systems that form part of institutional knowledge management.

These findings indicate that PLS plays a strategic role in supporting the internalization process within the SECI model of Nonaka and Takeuchi, particularly in the context of knowledge sharing. Internalization refers to the transformation of explicit knowledge into tacit knowledge that is understood, processed, and embedded in individual cognition. The simplification of language, removal of jargon and technical terms, and emphasis on conceptual clarity enable non-expert readers to understand scientific knowledge more effectively, thereby fostering the creation of new tacit knowledge that underpins learning and decision-making. The increasing use of AI technologies in the development of PLS also has the potential to expand the scale of this internalization process, although it must be balanced with quality assurance mechanisms to ensure that the knowledge absorbed remains accurate and valid.

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