

Summing Up Plain Language Summaries

A Systematic Review of Theory, Empirical Research and Guidelines

Marlene Stoll^{1, 2}, Anita Chasiotis¹, Martin Kerwer¹

¹Leibniz Institute for Psychology (ZPID), Trier

²Leibniz Institute for Resilience Research (LIR), Mainz

Background

How can we effectively communicate research to a non-expert audience?

- scientific jargon is often hard to understand for non-experts
- one solution: Plain Language Summaries (PLS)
- project PLaN Psy:
 - develop evidence-based guidelines for PLS

What is a *good* PLS?

What is
already
known?

Plain Language Summaries

evidence-based guidelines

What is
already
known?

Plain Language Summaries

Definition?

Terminology?

Aim?

evidence-based guidelines

What is a “good” PLS?

What is “effective”?

How can we measure it?

What is
already
known?

?

Plain Language Summaries

Definition?

Terminology?

Aim?

evidence-based guidelines

What is a “good” PLS?

What is “effective”?

How can we measure it?

Objectives

How can we conceptualize empirical research and theory on PLS?

→ conceptual framework

What is the empirical evidence on PLS effectiveness?

→ qualitative evidence synthesis

Methods

4 databases

Web of Science | PubMed | PsycInfo | PSYINDEX

Web of Science: last search on 2020-07-17; 3309 Treffer

TI = ("plain language summa*" OR "plain-language summa*" OR "lay summa*" OR "plain English summa*" OR "non-technical summa*" OR "non technical summa*" OR "nontechnical summa*" OR "summa* for layperson*" OR "systematic review* summa*" OR "evidence summa*" OR "lay abstract*" OR "plain language abstract*" OR "plain-language abstract*" OR "infographic*") AND TI = ("quality" OR "standard*" OR "comparison" OR "effective" OR "evaluation" OR "critical review" OR "development" OR "user testing") OR (AB = ("plain language summa*" OR "plain-language summa*" OR "lay summa*" OR "plain English summa*" OR "non-technical summa*" OR "non technical summa*" OR "nontechnical summa*" OR "summa* for layperson*" OR "systematic review* summa*" OR "evidence summa*" OR "lay abstract*" OR "plain language abstract*" OR "plain-language abstract*" OR "infographic*") AND AB = ("quality" OR "standard*" OR "comparison" OR "effective" OR "evaluation" OR "critical review" OR "development" OR "user testing"))

PubMed last search on 2020-07-29; 1744 Treffer

("plain language summa*[Title/Abstract] OR "plain-language summa*[Title/Abstract] OR "lay summa*[Title/Abstract] OR "plain English summa*[Title/Abstract] OR "non-technical summa*[Title/Abstract] OR "non technical summa*[Title/Abstract] OR "nontechnical summa*[Title/Abstract] OR "summa* for layperson*[Title/Abstract] OR "systematic review* summa*[Title/Abstract] OR "evidence summa*[Title/Abstract] OR "non-technical summa*[Title/Abstract] OR "lay abstract*[Title/Abstract] OR "plain language abstract*[Title/Abstract] OR "plain-language abstract*[Title/Abstract] OR "infographic*[Title/Abstract]) AND ("quality" OR "standard*" OR "comparison" OR "effective" OR "evaluation" OR "critical review" OR "development" OR "user testing")

PsycInfo: last search on 2020-07-16; 287 Treffer

3 ("plain language summa*" or "plain-language summa*" or "lay summa*" or "plain English summa*" or "non-technical summa*" or "non technical summa*" or "nontechnical summa*" or "summa* for layperson*" or "systematic review* summa*" or "evidence summa*" or "non-technical summa*" or "lay abstract*" or "plain language abstract*" or "plain-language abstract*" or "infographic*").ti. or ("plain language summa*" or "plain-language summa*" or "lay summa*" or "plain English summa*" or "non-technical summa*" or "non technical summa*" or "nontechnical summa*" or "summa* for layperson*" or "systematic review* summa*" or "evidence summa*" or "non-technical summa*" or "lay abstract*" or "plain language abstract*" or "plain-language abstract*" or "infographic*").ab. (550)
4 ("quality" or "standard*" or "comparison" or "effective" or "evaluation" or "critical review" or "development" or "user testing").ti. or ("quality" or "standard*" or "comparison" or "effective" or "evaluation" or "critical review" or "development" or "user testing").ab. (1387340)
5 3 and 4 (287)

PSYINDEX: Datum: last search on 2020-07-16; 10 Treffer

1 ("plain language summa*" or "plain-language summa*" or "lay summa*" or "plain English summa*" or "non-technical summa*" or "non technical summa*" or "nontechnical summa*" or "summa* for layperson*" or "systematic review* summa*" or "evidence summa*" or "non-technical summa*" or "lay abstract*" or "plain language abstract*" or "plain-language abstract*" or "infographic*").ti. or ("plain language summa*" or "plain-language summa*" or "lay summa*" or "plain English summa*" or "non-technical summa*" or "non technical summa*" or "nontechnical summa*" or "summa* for layperson*" or "systematic review* summa*" or "evidence summa*" or "non-technical summa*" or "lay abstract*" or "plain language abstract*" or "plain-language abstract*" or "infographic*").ab. (15)
2 ("quality" or "standard*" or "comparison" or "effective" or "evaluation" or "critical review" or "development" or "user testing").ti. or ("quality" or "standard*" or "comparison" or "effective" or "evaluation" or "critical review" or "development" or "user testing").ab. (75303)
3 1 and 2 (10)

Methods

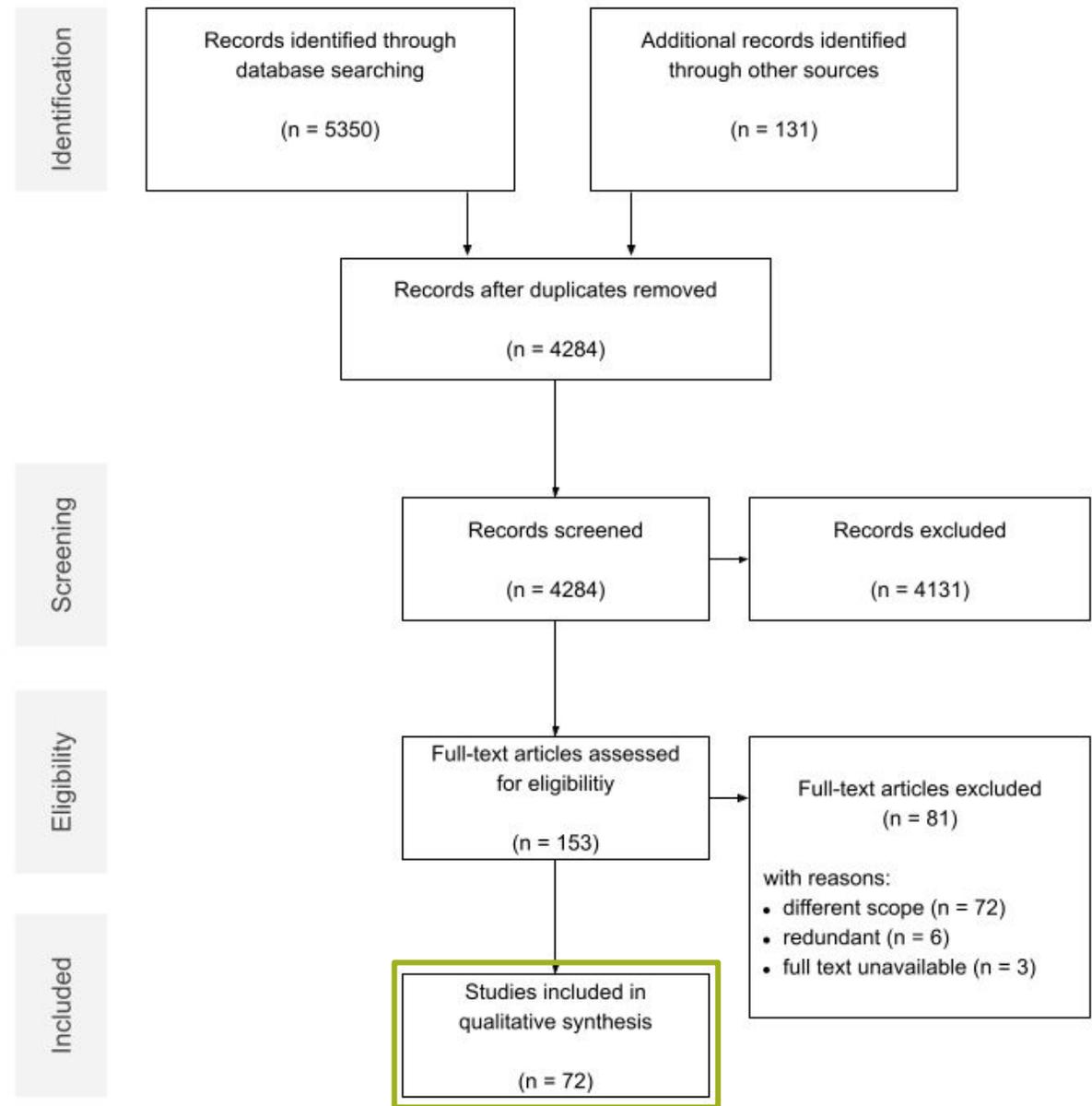
inclusion criteria

- The described PLS ...
 - need to be summaries of published evidence
 - need to aim at a lay readership
- German and English records of these study types:
 - empirical studies and reviews of studies in which
 - PLS are investigated
 - PLS criteria / guidelines are developed / evaluated
 - theoretical articles
 - guidelines

Results

inclusion criteria

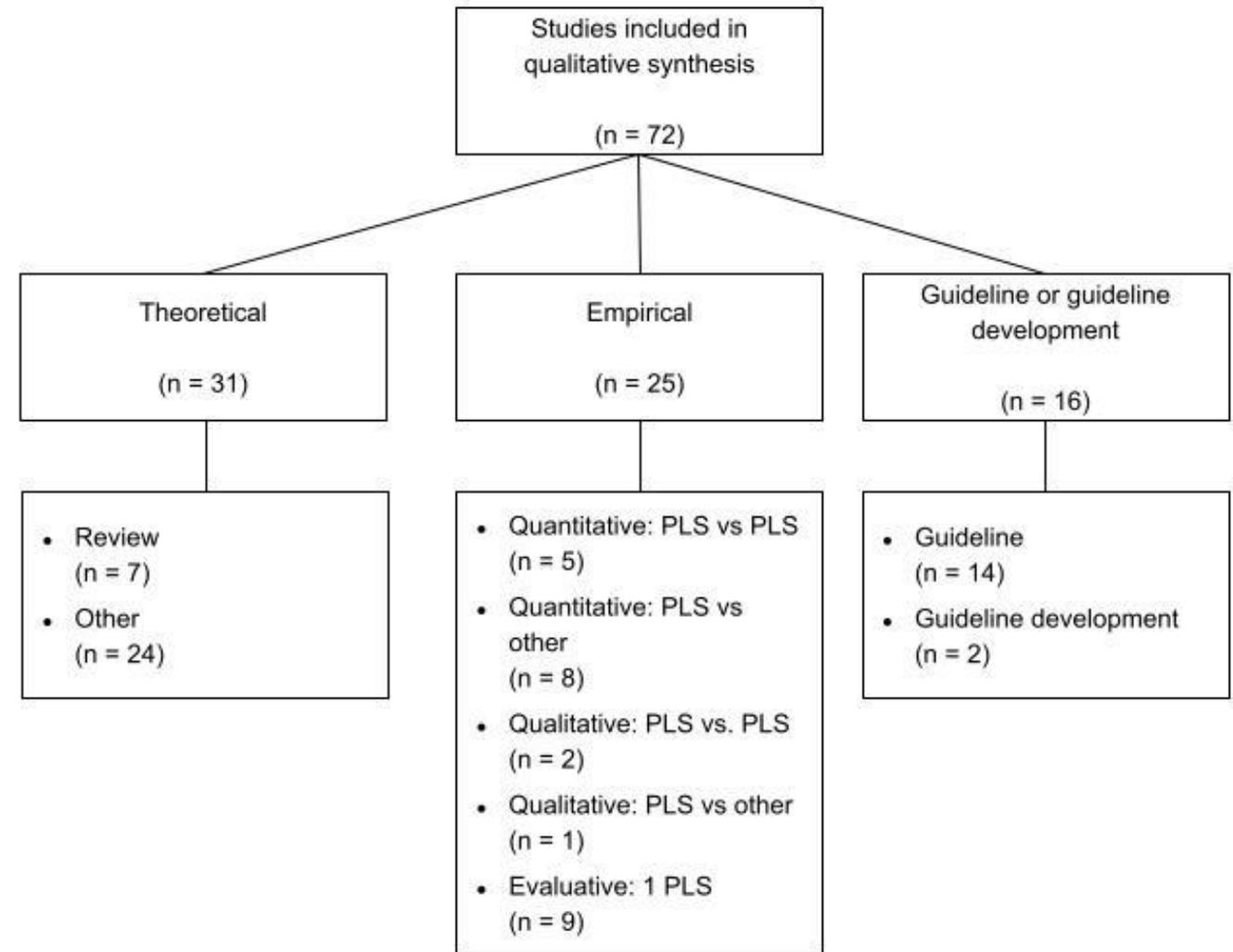
- The described PLS ...
 - need to be summaries of published evidence,
 - need to aim at a lay readership
- German and English records of these study types:
 - empirical studies and reviews of studies in which
 - PLS are investigated
 - PLS criteria / guidelines are developed / evaluated
 - theoretical articles
 - guidelines



Results

inclusion criteria

- The described PLS ...
 - need to be summaries of published evidence,
 - need to aim at a lay readership
- German and English records of these study types:
 - empirical studies and reviews of studies in which
 - PLS are investigated
 - PLS criteria / guidelines are developed / evaluated
 - theoretical articles
 - guidelines



Methods

What are PLS for?

- finalistic
- **AIMS**

What are PLS made of?

- ontological
- **CHARACTERISTICS**

What should PLS be like?

- normative
- **CRITERIA**

How are PLS investigated?

- measurement-related
- **OUTCOMES**

Methods

What are PLS for?

- finalistic
- AIMS

What are PLS made of?

- ontological
- CHARACTERISTICS

qualitative content analysis

- 3 raters
- information extraction for each subject area
- identification and labeling of homogeneous groups of information
- discussion of proposed categories and rationals
 - final set of agreed categories
 - framework

What should PLS be like?

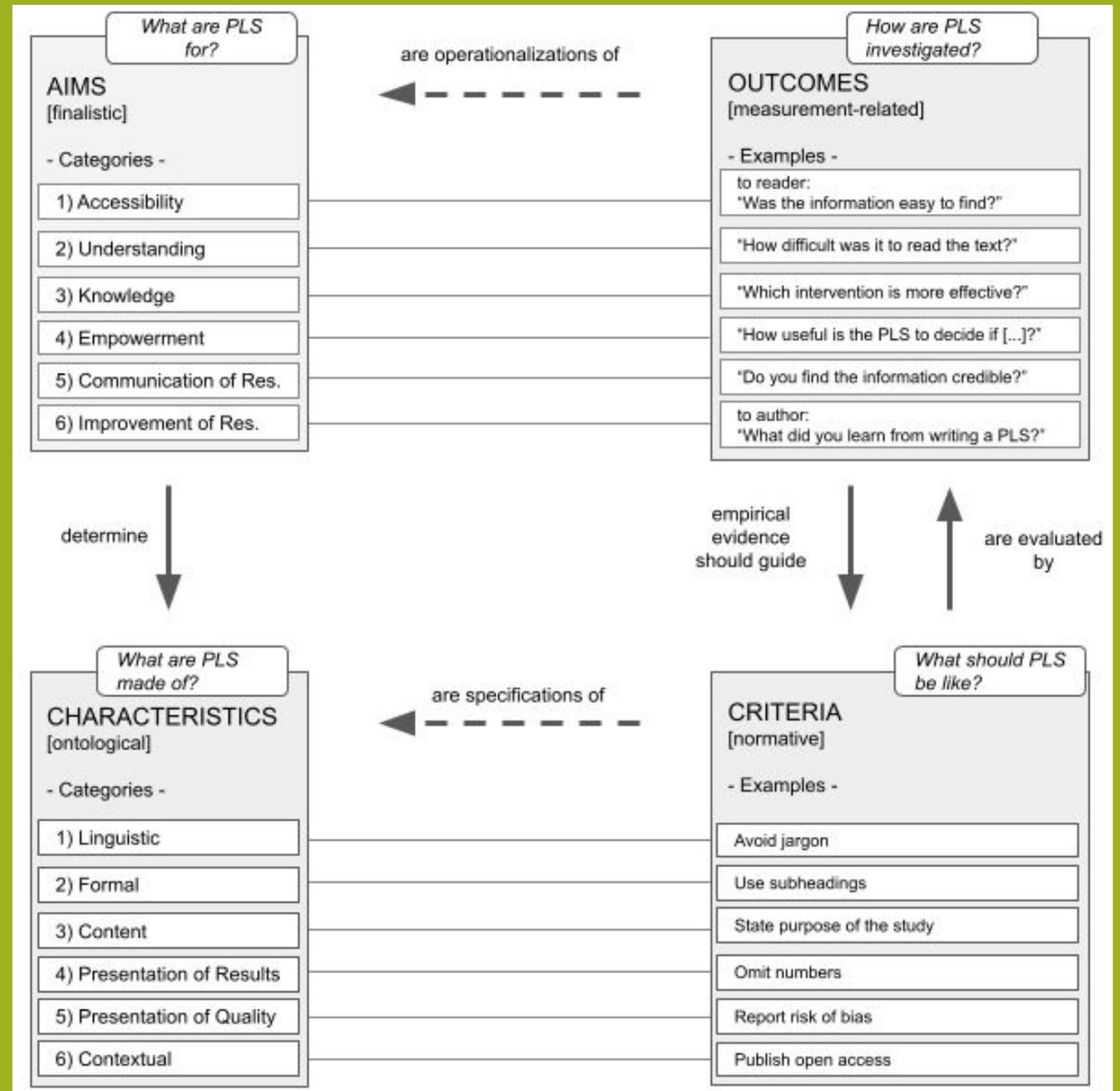
- normative
- CRITERIA

How are PLS investigated?

- measurement-related
- OUTCOMES

Results

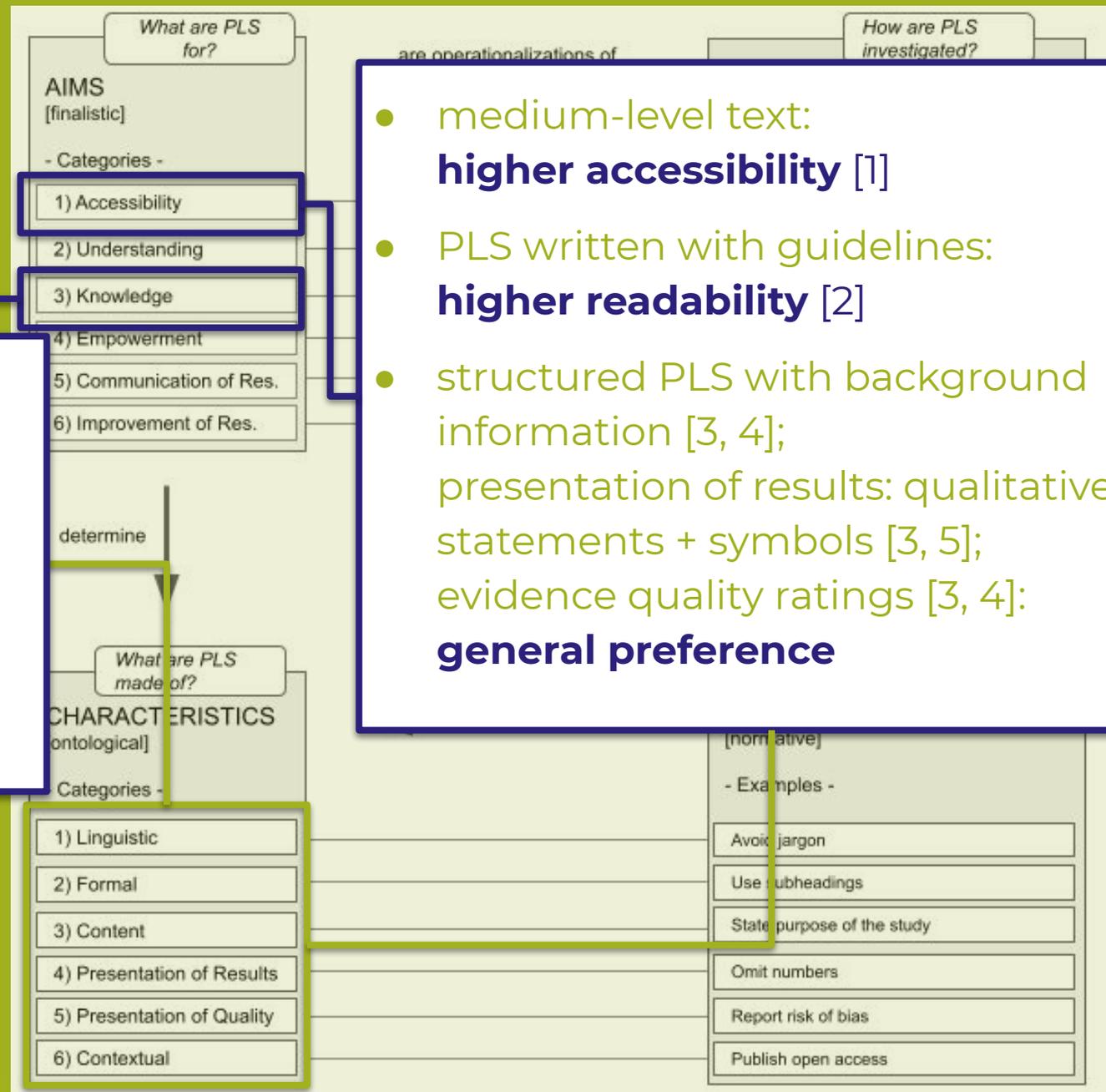
conceptual framework



Results

evidence synthesis

- structured PLS:
higher knowledge acquisition [6]
- PLS with background information, presentation of results with qualitative statements + symbols, evidence quality grading [3]:
higher knowledge acquisition



- medium-level text:
higher accessibility [1]
- PLS written with guidelines:
higher readability [2]
- structured PLS with background information [3, 4]; presentation of results: qualitative statements + symbols [3, 5]; evidence quality ratings [3, 4]:
general preference

[1] Martinez Silvagnoli, L., Shepherd, C., Pritchett, J., Gardner, J.: How Can We Optimize the Readability and Format of Plain Language Summaries for Medical Journal Articles? A Cross-sectional Survey Study, *JMIR Preprints*, 23/07/2020:22122.
[2] Kirkpatrick, E., Gaisford, W., Williams, E., Brindley, E., Tembo, D., & Wright, D. (2017). Understanding Plain English summaries. A comparison of two approaches to improve the quality of Plain English summaries in research reports. *Research involvement and engagement*, 3(1), 1-14.
[3] Santesso, N., Rader, T., Nilsen, E. S., Glenton, C., Rosenbaum, S., Ciapponi, A., ... & Schünemann, H. J. (2015). A summary to communicate evidence from systematic reviews to the public improved understanding and accessibility of information: a randomized controlled trial. *Journal of clinical epidemiology*, 68(2), 182-190.
[4] Ellen, M. E., Lavis, J. N., Wilson, M. G., Grimshaw, J., Haynes, R. B., Ouimet, M., ... & Gruen, R. (2014). Health system decision makers' feedback on summaries and tools supporting the use of systematic reviews: a qualitative study. *Evidence & Policy: A Journal of Research, Debate and Practice*, 10(3), 337-359.
[5] Glenton, C., Santesso, N., Rosenbaum, S., Nilsen, E. S., Rader, T., Ciapponi, A., & Dilkes, H. (2010). Presenting the results of Cochrane Systematic Reviews to a consumer audience: a qualitative study. *Medical Decision Making*, 30(5), 566-577.
[6] Alderdice, F., McNeill, J., Lasserson, T., Beller, E., Carroll, M., Hundley, V., ... & Clarke, M. (2016). Do Cochrane summaries help student midwives understand the findings of Cochrane systematic reviews: the BRIEF randomised trial. *Systematic reviews*, 5(1), 1-10.

Results

overview of guidelines and criteria

14 guidelines

Guideline	Linguistic Attributes	Formal Attributes	General Content	Presentation of Results	Presentation of Quality of Evidence	Contextual Information
American Psychological Association ("translational abstract"), psychological science	<p>Tone:</p> <ul style="list-style-type: none"> more personal and friendly than scientific abstract do not overstate or oversimplify findings or conclusions <p>Words:</p> <ul style="list-style-type: none"> - <p>Sentences:</p> <ul style="list-style-type: none"> - 	<p>Text Length:</p> <ul style="list-style-type: none"> 150 - 200 words <p>Text Structure:</p> <ul style="list-style-type: none"> - <p>Use of Tables/Visuals:</p> <ul style="list-style-type: none"> - 	<p>Title:</p> <ul style="list-style-type: none"> - <p>Content structure:</p> <ul style="list-style-type: none"> follow a pattern of introduction, method, results, and discussion <p>Headlines:</p> <ul style="list-style-type: none"> - <p>Content:</p> <ul style="list-style-type: none"> consider your audience clearly describe the problem under investigation describe participants only in so far include detailed information on participants and sample size only if it is remarkable in some way; detailed information about study methods may be summarized or omitted emphasize conclusions that are relevant for the audience try create a "take home message" 	<ul style="list-style-type: none"> state the findings in clear, nontechnical language remove any statistics if article contains more multiple studies, summarize contents of all studies 	<ul style="list-style-type: none"> - 	<p>purpose of text:</p> <ul style="list-style-type: none"> should clearly communicate contents of the article should emphasize its value to educated public/professional audiences <p>author of PLS:</p> <ul style="list-style-type: none"> - <p>review of PLS:</p> <ul style="list-style-type: none"> - <p>access:</p> <ul style="list-style-type: none"> - <p>context:</p> <ul style="list-style-type: none"> recommendation for PLS as standard feature of each APA journal article <p>relation to scientific abstract:</p> <ul style="list-style-type: none"> scientific abstract forms the foundation for the translational abstract
Cochrane PLEACS 2013 ("PLS"), Cochrane Intervention Reviews	<p>Tone:</p> <ul style="list-style-type: none"> - <p>Words:</p> <ul style="list-style-type: none"> avoid technical terms and jargon (explain them if unavoidable) avoid words that are too long with many syllables avoid misunderstandable 	<p>Text Length:</p> <ul style="list-style-type: none"> 250 - 300 words <p>Text Structure:</p> <ul style="list-style-type: none"> use short paragraphs <p>Use of Tables/Visuals:</p> <ul style="list-style-type: none"> - 	<p>Title:</p> <ul style="list-style-type: none"> restate review title in plain language if possible, otherwise explain terms avoid recommendations <p>Content structure:</p> <ul style="list-style-type: none"> review question background study characteristics key results quality of evidence 	<ul style="list-style-type: none"> present results for all main outcomes use consistent wording across outcomes report findings on harms that are described in the review and state whether they have been fully reported by the RCTs it is not essential to provide numerical data do not present numerical data if 	<ul style="list-style-type: none"> describe overall quality of evidence for each of the main outcomes based on GRADE describe any factor that could affect the confidence in the results provide key reasons for quality of evidence 	<p>purpose of text:</p> <ul style="list-style-type: none"> prepare a summary of the review that contains the crucial information in plain language and that will be understood by the general public <p>author of PLS:</p> <ul style="list-style-type: none"> - <p>review of PLS:</p> <ul style="list-style-type: none"> -
	<p>words</p> <ul style="list-style-type: none"> consider introducing an acronym or short term for repeated use avoid regional terms (AE / BE) use active voice <p>Sentences:</p> <ul style="list-style-type: none"> one keypoint / sentence avoid more than two hard words in a sentence unless you can explain them 		<p>Headlines:</p> <ul style="list-style-type: none"> standard headings consistent order in bold type <p>Content:</p> <ul style="list-style-type: none"> convey the question addressed in the review short description of population, intervention and outcomes give detail on study characteristics (incl. search date and funding sources) specific recommendations, avoid recommendations 	<ul style="list-style-type: none"> estimations of effects are imprecise or uncertain if numerical data is provided, use natural frequencies for dichotomous outcomes and accompany relative effects with absolute effect estimates explain any statistical term statics, if used, should provide valid, digestible summary of direction, size and precision of the effect estimates 	<ul style="list-style-type: none"> / limitations in lay terms also describe if quality of evidence is high if impact of funding sources on quality of the evidence is considered in the, include a statement in the PLS 	<p>access:</p> <ul style="list-style-type: none"> - <p>context:</p> <ul style="list-style-type: none"> tailor messages across different summary versions of the review <p>relation to scientific abstract:</p> <ul style="list-style-type: none"> consistent reporting of key messages between PLS, main text, SoF table and authors' conclusions.
Cochrane Checklist 1 ("PLS"), Cochrane Intervention Reviews	<p>Tone:</p> <ul style="list-style-type: none"> - <p>Words:</p> <ul style="list-style-type: none"> avoid research jargon refer to "study" rather than "trial" use name of the outcome and name of intervention instead of 	<p>Text Length:</p> <ul style="list-style-type: none"> 400-700 words <p>Text Structure:</p> <ul style="list-style-type: none"> - <p>Use of Tables/Visuals:</p> <ul style="list-style-type: none"> if PLS is published outside Cochrane 	<p>Title:</p> <ul style="list-style-type: none"> if title is difficult to understand, consider re-writing it in plain language <p>Content structure:</p> <ul style="list-style-type: none"> What is the aim of review? Key messages What was studied in the 	<ul style="list-style-type: none"> present results only for the most important outcomes, try not to present more than 7 outcomes if no data was found present outcomes anyway present results consistently (similar words / expressions for similar effects) 	<ul style="list-style-type: none"> present quality or certainty for each outcome as presented in the SoF table if quality/certainty is not high, avoid strong statements, add modifying statements presenting confidence 	<p>purpose of text:</p> <ul style="list-style-type: none"> - <p>author of PLS:</p> <ul style="list-style-type: none"> - <p>review of PLS:</p> <ul style="list-style-type: none"> - <p>access:</p> <ul style="list-style-type: none"> - <p>context:</p> <ul style="list-style-type: none"> -

...

Conclusion

- considerable work has been done
 - but is very heterogeneous
 - lack of standardization
- empirical evidence
 - scattered, promising approaches
 - experimental research on small, specific samples
- framework
 - possible starting point for future guideline developers and scicomm researchers

Take Home

- Plain Language Summaries
- Research on PLS
- Conceptual Framework

are a promising solution for scientific communication.
is still very heterogeneous, empirical evidence is scarce.
may help to develop research designs and/or guidelines.

Take Home

- Plain Language Summaries
- Research on PLS
- Conceptual Framework

What is a *good* PLS?

are a promising solution for scientific communication.
is still very heterogeneous, empirical evidence is scarce.
may help to develop research designs and/or guidelines.

A text with specific characteristics, which can take shape in the determination of criteria.

Those criteria make a difference regarding the PLS' aims.

The difference can be measured with specific outcomes

PLan Psy

theory | empirical research | guidelines for PLS of psychological meta-analyses



Anita Chasiotis



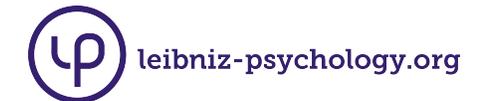
Martin Kerwer



Gesa Benz



Mark Jonas



Contact

Marlene Stoll

ms@leibniz-psychology.org

[@starlene_moll](https://twitter.com/starlene_moll) 

PLan Psy

[Project Website](#)

planpsy@leibniz-psychology.org