

ANALYSIS OF REACH FOR DIFFERENT FORMATS OF PLAIN LANGUAGE SUMMARIES

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BACKGROUND AND AIMS

- A plain language summary (PLS) provides an easy-to-understand overview of scientific research for patients and other non-specialist audiences
- There is increasing acknowledgment of the importance of PLSs, shown by:
 - PLSs being mandated in the dissemination of European clinical trial results¹
 - PLSs already being implemented by some pharmaceutical companies in their publication processes²
- PLSs offer a potential way to enhance the reach, visibility and impact of any scientific research
- Future Science Group (FSG) is a publisher that issues PLSs in three different formats in addition to main articles
- We investigated the reach and engagement differences between the different PLS formats in one FSG journal (*Future Oncology*) to reveal their impact on data dissemination, using publication metrics
- We also conducted an online survey of PLS attributes to understand which PLS format has the greatest level of perceived reach beyond the primary audience of research publications and which factors are most likely to influence their reach, according to the industry professionals

METHODS

- We examined 213 articles with PLSs published from October 2020 - October 2021 by the journal *Future Oncology* and recorded the type of PLS format used by each article, which we classified as:



PLS as a standalone article: This is a peer-reviewed, short, visually enriched article, which summarises a key publication. It is published separately from the main article and has its own unique digital object identifier (DOI) that acts as a specific link for documents published online, making them easier to find³



PLS published alongside an article: This is a short, visually enriched document, which summarises a key publication. It is usually published as a supplementary file adjacent to the main article³



PLS as a lay abstract within an article: This is a short summary from which the jargon has been removed. It is published within the main article, alongside the abstract³

PUBLICATION METRICS

- The Altmetric Attention Score (AAS) is a weighted count of all mentions Altmetric has tracked for a publication, and indicates the amount and reach of attention a publication has received. The mean AAS and numbers of tweets and citations, were calculated for each of the three PLS format types. For the comparison between a standalone and its corresponding original article, the top three tweeted publications were used

PLS ATTRIBUTES SURVEY

- A survey was developed and posted to the ISMPP LinkedIn group, the ISMPP Connect Forums and the Cello Health Twitter and LinkedIn accounts. Survey responses were collected from 2 to 10 December 2021. Survey questions (SQs) were as follows:

| | |
|------------|---|
| SQ1 | Please select one of the following plain language summary formats that you feel provides the greatest level of reach (the number or percentage of people in your target audience who see your content) beyond the primary audience of research publications: |
| | (i) PLS as standalone article (ii) PLS published alongside article (iii) Lay abstract |
| SQ2 | Please rank from most (1) to least (5) important of what aspects of a plain language summary have the greatest impact on its reach beyond the primary audience: |
| | (i) Visual enhancements (figures to simplify or explain concepts) (ii) Length (the word count of the document) (iii) Readability (the ease with which a reader can understand the written text) (iv) Citability (the ability to use the article as a reference, e.g., through a DOI) (v) Discoverability (the ease of finding an article when searching online) |

TALKWALKER DATA ANALYSIS



- Using the social media listening tool Talkwalker, we extracted data from the top three tweeted articles for each of the three PLS formats, looked at the total number of mentions for each type, and assessed their engagement and potential reach. 'Engagement' refers to the sum of interactions with an article or post (e.g., likes, retweets, shares, comments, etc.) while 'potential reach' of an article/post represents the number of people who could be potentially reached by this article/post, calculated as:

Potential reach =

Total no. of Twitter account followers + Total no. of monthly unique visitors to blogs, online news sites and forums

- Descriptive statistics were used to summarise the data

CONCLUSIONS

- Standalones** seem to provide a greater reach of information when compared with other PLS formats using publication metrics, while survey respondents indicated that **alongsides** may have a greater potential to enhance the reach of research publications beyond the primary audience
- Citability and length** appear to be the most important factors influencing the reach of PLSs, according to the survey respondents
- Twitter is the most commonly used medium for data dissemination that may provide extended engagement of PLSs**
- PLSs can reach a wider potential audience through the use of different media types other than Twitter, such as online news, newspapers and press releases**
- One limitation of this research is the low number of publications that were included to analyse the reach of the different PLS format types; inclusion of a greater number of publications would allow better interpretations of data gained from Talkwalker**
- Further research on different journal or therapy areas is needed; this could include surveying the lay audience regarding their preferred PLS format**

PUBLICATION METRICS

- Of 213 articles with PLSs, the majority of PLSs were published as lay abstracts (96.2%), while few were published as standalone (2.5%) or alongside (1.4%)
- Standalones have the highest mean AAS and numbers of tweets compared with other formats (**Figure 1**); however, the mean number of citations for standalones were negligible compared with their original articles (**Figure 2a**)
- As shown by daily page views (**Figure 2b**), standalones appear to be viewed while not being cited (**Figure 2a**). Nevertheless, the original articles appear to have extended reach through their respective standalones
- Alongsides had the most citations and the second highest mean AAS and number of tweets (**Figure 1**)

Figure 1. AAS, tweets* and citations across three PLS format types

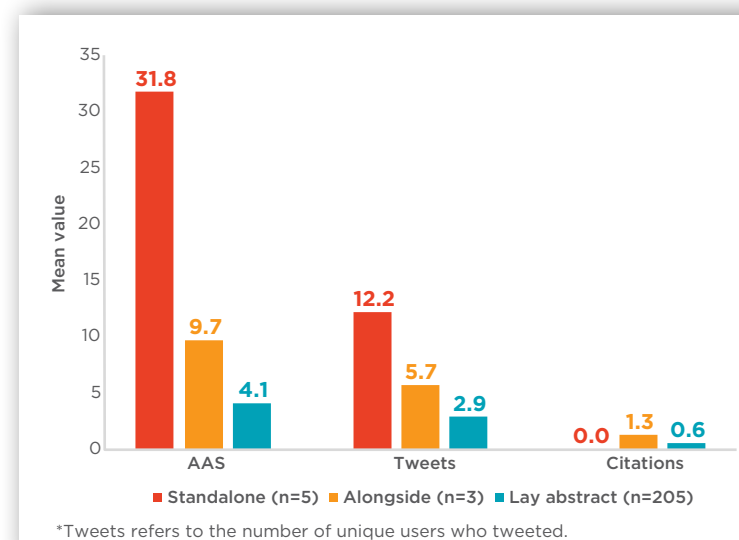
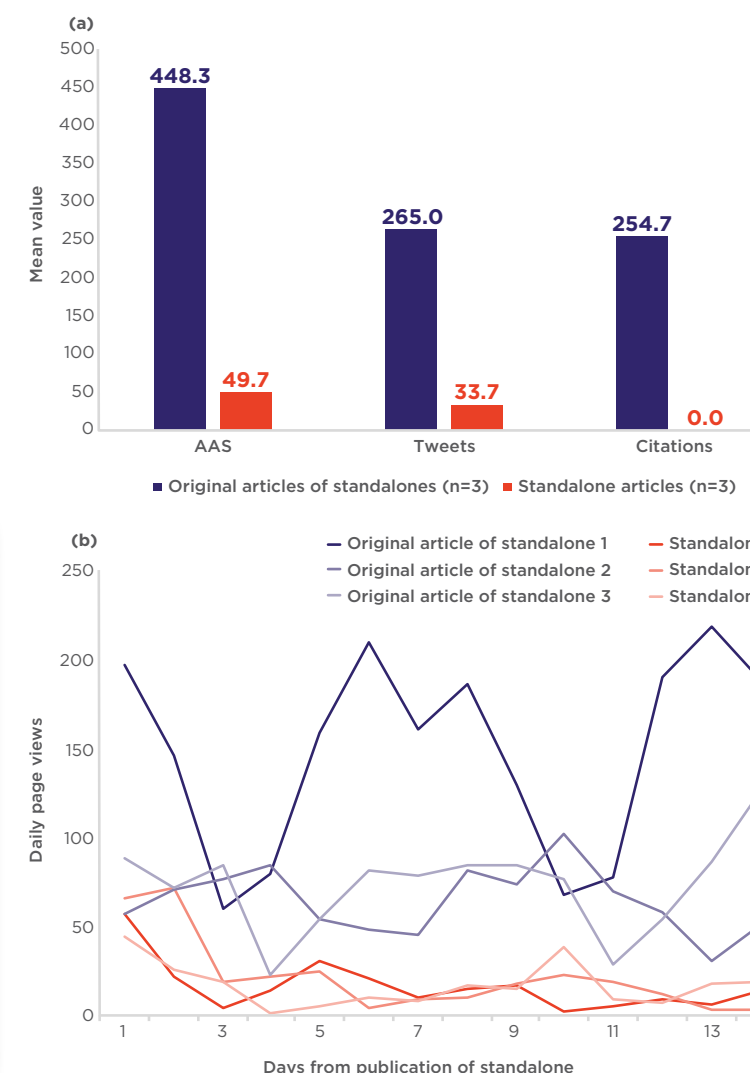


Figure 2. Comparison between the top three tweeted standalones and their original articles for (a) total mean values for AASs, tweets and citations, and (b) individual daily page views over the first 2 weeks of standalone publication

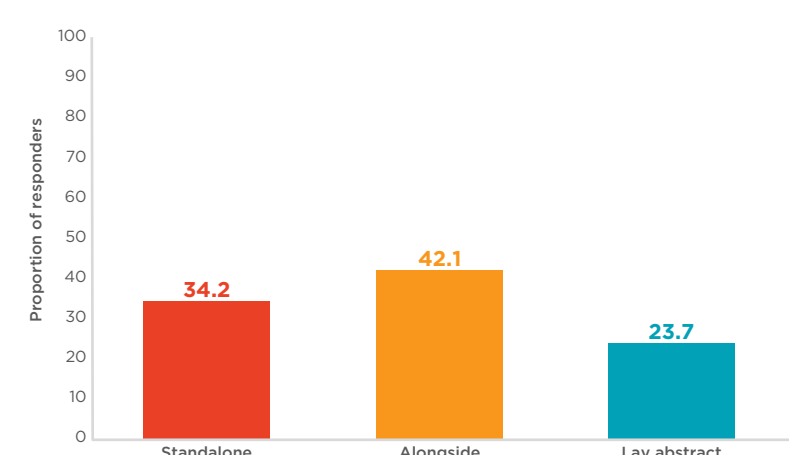


PLS ATTRIBUTES SURVEY

- Of 54 respondents who initiated the survey, 45 provided information about their profession as follows:
- 40% Pharmaceutical industry professional**
- 35.6% Medical communications agency professional**
- 6.7% Healthcare professional**
- 17.8% Other professional**

- A total of 38/54 respondents answered SQ1; of these, 42.1% indicated that the alongside format is most likely to have the greatest perceived reach beyond the primary audience of research publications (**Figure 3**)

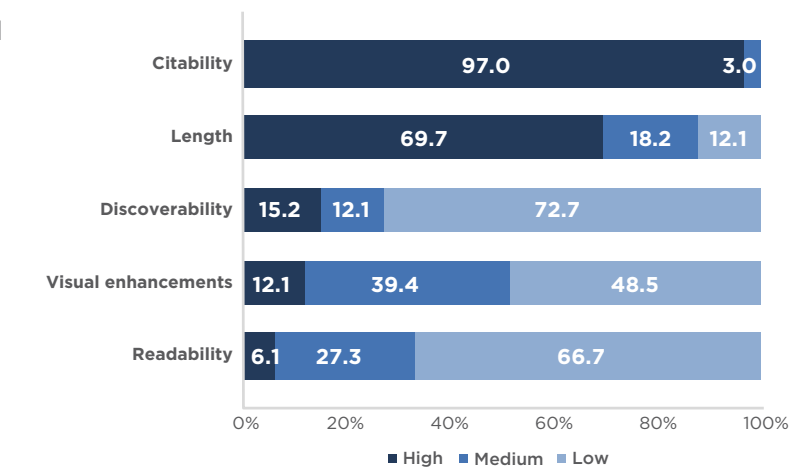
Figure 3. PLS format type that had the greatest perceived level of reach beyond the primary audience of research publications according to survey respondents (n=38)



RESULTS

- 'Citability' and 'length' were ranked as the high priority factors influencing the reach of PLSs by 97.0% and 69.7% out of 33 respondents, respectively (**Figure 4**) who answered SQ2

Figure 4. Factors influencing the reach of PLSs stratified as high, medium and low priority according to survey respondents (n=33)*



*The factors were stratified based on the scores received from the 33 respondents as follows: low priority (score = 1 or 2); medium priority (score = 3); high priority (score = 4 or 5).

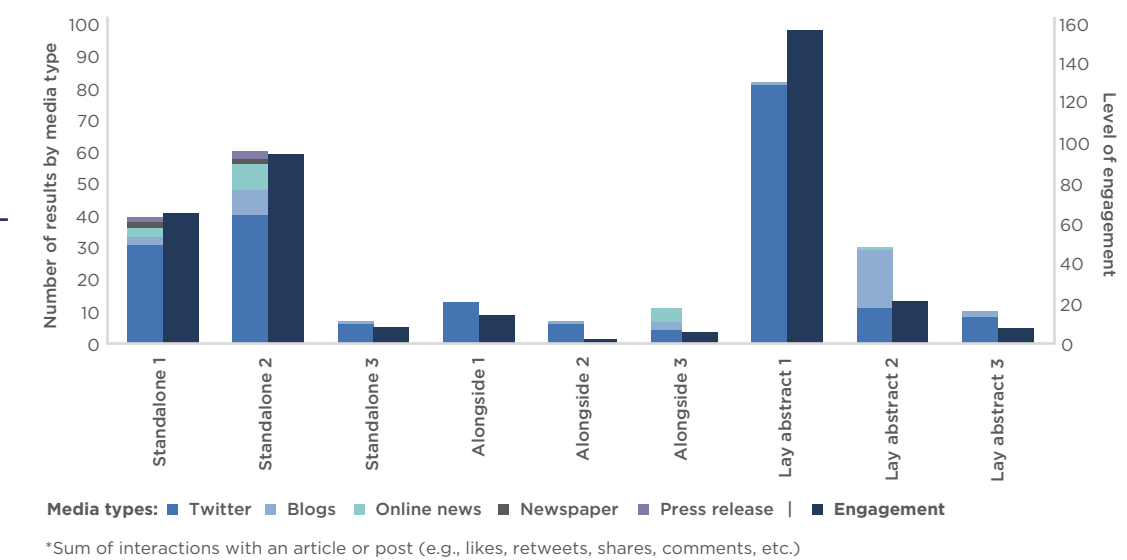
TALKWALKER DATA ANALYSIS

- The number of results found using Talkwalker appears to correspond closely with the level of engagement for each of the three PLS format type examples, with Twitter being the most commonly used medium for dissemination (**Figure 5**)
- The use of different media types other than Twitter, such as online news, newspapers and press releases, explains the greater potential reach of standalones (**Table 1**)

Table 1. Potential reach of the top three publications for each PLS format type - overall and by media type

| PLS Format | Potential reach | | | | | |
|-----------------------|-----------------|---------|-----------|-------------|-----------|---------------|
| | Overall | Twitter | Blogs | Online news | Newspaper | Press release |
| Standalone 1 (n=39) | 28,099,897 | 87,243 | 0 | 27,056,538 | 892,480 | 63,636 |
| Standalone 2 (n=60) | 34,515,095 | 69,689 | 2,103,157 | 29,275,672 | 631,578 | 2,434,999 |
| Standalone 3 (n=7) | 12,858 | 12,858 | 0 | 0 | 0 | 0 |
| Alongside 1 (n=13) | 18,563 | 18,563 | 0 | 0 | 0 | 0 |
| Alongside 2 (n=7) | 17,125 | 17,125 | 0 | 0 | 0 | 0 |
| Alongside 3 (n=11) | 455,760 | 5,762 | 200,000 | 249,998 | 0 | 0 |
| Lay abstract 1 (n=82) | 660,128 | 660,128 | 0 | 0 | 0 | 0 |
| Lay abstract 2 (n=30) | 19,637 | 15,407 | 0 | 4,230 | 0 | 0 |
| Lay abstract 3 (n=10) | 48,707 | 48,707 | 0 | 0 | 0 | 0 |

Figure 5. Number of results by media type and level of engagement* across the top three publications for each PLS format type



References

- European Medicines Agency. Clinical Trials Regulation. www.ema.europa.eu/en/human-regulatory/research-development/clinical-trials/clinical-trial-regulation (Accessed: 9 December 2021)
- Pfizer Inc. Plain language study results summaries. <https://www.pfizer.com/science/clinical-trials/plain-language-study-results-summaries> (Accessed: 9 December 2021)
- Future Medicine Ltd. Plain language summaries. <https://www.futuremedicine.com/plainlanguagesummaries> (Accessed 24 November 2021).

Disclosures

Shilpa Khobragade, Pippa Perrett, Craig Burgess, Heather Smith, Aree Cheshire and Lorraine Law are full time employees of Cello Health Communications. Damian Eade is a full-time employee of Cello Health Insight.

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