Experiences of Public Library Staff with Science and Health Misinformation.

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Introduction

Background

From the late 19th and early 20th centuries postal systems, taking weeks to months to relay information, to the 21st century cutting that time to seconds, technological advancements have dramatically enhanced our capacity to engage with information. Nowadays, science and health information is readily accessible from multiple online platforms for convenience or often to support a particular viewpoint. Presently, there still exists a sizable population that may lack the digital and information literacy skills (IL) necessary to navigate the constant flux of information. This can easily be exploited, such as at the peak of the COVID-19 pandemic when misinformation revolving online was at an all-time high. Libraries are generally recognized be a reputable source of information and thus can be utilized as a research avenue for implementing future PDs that aim to improve digital or IL skills. Presently, there is still much to be known about the experience and needs of library staff in addressing these challenges, which this research hopes to uncover and serve as the foundation for future PD interventions.

Research Questions and Overview

Carol Brown, Ph.D. candidate, and main researcher of this project has explored the efficacy of public libraries to be a great avenue for addressing health and science misinformation due to their accessibility and reputation to be trustworthy (Young et al., 2021; Sullivan, 2019). To address this issue, the two following research questions have emerged:

1. ***What are the experiences and needs of public library staff in relation to engaging with science and health misinformation?**
2. What design characteristics of professional development activities for public library staff related to science and health mis/information support participation and learning?

This research is composed of three stages:

* 1 Collection of data from public library staff across Alberta through survey responses and focus group transcripts

2 Addresses the second research question through professional development intervention

3 Evaluation and Analysis of PD Interventions.

*** Research involvement is on Stage 1 only with a particular focus on survey responses.**

Methods

Data Collection

Public library staff who have worked throughout the province within the past two years were recruited through non-random sampling by contacting regional library systems via email, word-of-mouth, and promotions in symposiums or exhibits. The survey is conducted anonymously through the software Qualtrics. Consent is obtained through the welcome page, followed by the completion of four sections as follows:

1. *Section 1: Work Experiences and Context:* focuses on staff experiences with patron interactions addressing science or health topics and misinformation. Also contains demographic questions such as years of relevant experience and role in the library (e.g. desk management, programming, etc.) Contains open-ended questions.
2. Section 2: *PD Experiences and Preferences:* experiences and preferences with PD surrounding science/health topics, as well as exploring interests and needs relating to science that could be implemented for future PD. Contains open-ended questions as well.
3. *Section 3: Education Experiences:* explores demographic information about educational background.
4. *Section 4: Demographic Information:* Inquires library contexts (urban vs rural) and where they are based to personalize PD based on differences in location contexts. Also explores gender identities.

(Brown, 2024)

Thematic Analysis

This approach was utilized to analyze the survey's open-ended responses. This analysis is used in quantitative data by recognizing patterns or themes within the data (Xu & Zammit, 2020). Themes emerge from codes that categorize attributes for a portion of qualitative data. Inductive coding, which is data-driven, involves a ground-up approach where codes are derived from the data themselves (Xu & Zammit, 2020). In contrast, deductive coding is a top-down approach, starting with a set of pre-defined codes derived from the research questions. Both coding types were utilized in this research.

The following are steps to thematic analysis that were adhered to in this research:

1. Familiarizing the data
2. Generating initial codes
3. **Searching for themes***
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

* Current step as of August 30th, 2024 (Braun & Clarke, 2006).

Roles and Responsibilities

- Given access to open-ended responses from the anonymous library staff survey to code. Qualitative analysis software was used to analyze these responses.
- Given access to the transcripts of the focus groups held on Zoom to code.
- Generate graphs and tables from survey responses quantitative data and transcribe one of the focus group Zoom recordings.
- Reviewing and organizing the set of codes, as well as generating mind maps to search for themes.

Software Used

NVivo
Qualitative analysis research tool. Used for organizing qualitative data and generating codes.

Google Sheets
Used for generating graphs and tables from quantitative data in survey responses.

Survey Results and Data Interpretation

Key Findings

Context

- Approximately 78% of respondents have completed post-secondary education, and almost 50% are seasoned workers, having worked 10 years or more within public libraries.

Experiences

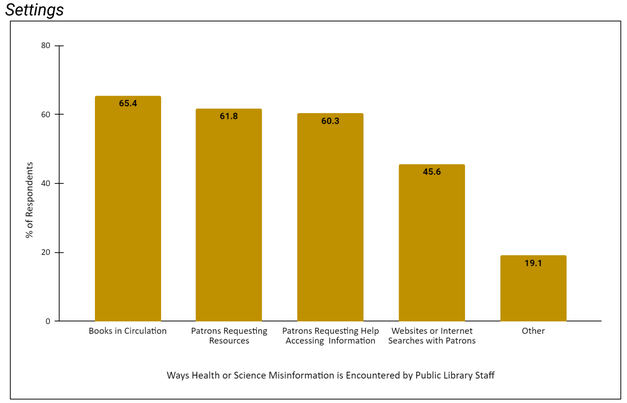
- 80% of the participants have encountered science or health misinformation within their roles, and the misinformation flow is multidirectional (e.g., patron to patron, patron to staff, etc.)
- Despite the number of participants with extensive experience and exposure to misinformation, the majority have not taken part in PD focused on identifying, evaluating, addressing, or implementing programs related to science or health misinformation (Figure 2).

Where is this misinformation mostly encountered?

- From data collected, health and science misinformation is mostly encountered from books in circulation, followed by resources that patrons request, assistance with accessing information, and websites or internet searches (Figure 1).

Figure 1

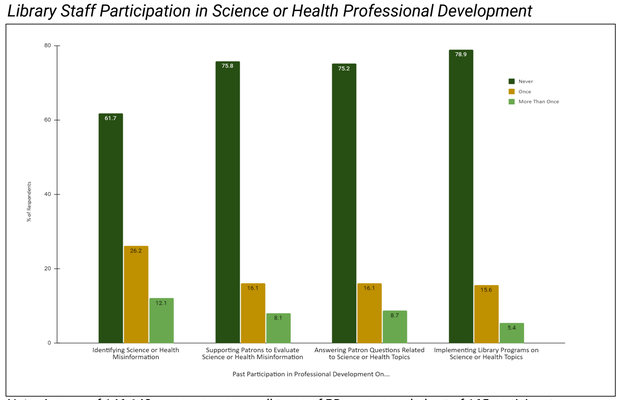
Contexts in Which Science or Health Misinformation is Encountered in Public Library Settings



Note: Reflects 136 responses out of 165 participants. Participants can choose more than one answer. The 'Other' category includes misinformation from pamphlets, out-of-date resources, library lacking a reference desk, library facilities used by other organizations, patrons spreading misinformation or conspiracies, and have not encountered misinformation.

Figure 2

Library Staff Participation in Science or Health Professional Development



Note: A range of 146-148 responses across all types of PD were recorded out of 165 participants. Participants can choose more than one answer.

Needs of Library Staff

- Access to science databases for verifying the accuracy of information.
- Specific training on navigating patron interactions. How to not cross boundaries?
- Professional to lead presentations & workshops to increase turnout.
- Funding for implementing new programs or resources.

Limitations

- Participants come from diverse roles within public libraries, and they represent 165 out of thousands of library staff in Alberta.
- Respondents may be more gravitated towards this research topic. They do not reflect the interests of all library staff within Alberta due to the non-random sampling method.

Prospects

- Approximately 80% of respondents are interested in PD involvement across diverse topics such as engaging, developing programming, accessing, and strategies for identifying science or health misinformation.
- PD is a promising intervention in addressing research questions due to this high interest.

Overall Experience

- This research experience has broadened my knowledge of qualitative research and developed a passion for it.
- Collaboration with graduate students and teachers has deepened my understanding of curriculum development and pedagogy skills.
- Expanded my repertoire and skills as an upcoming teacher. One of them is being introduced to the eBook software PandaSuite, which will be utilized in my classroom.

References

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brown, C. (2024). Survey Plan for Science in Libraries Survey (Stage 1) (Appendix A:). University of Alberta.

Sullivan, M. C. (2019). Leveraging library trust to combat misinformation on social media. Library & Information Science Research, 41(1), 2–10. https://doi.org/10.1016/j.lisr.2019.02.004

Xu, W., & Zammit, K. (2020). Applying Thematic Analysis to Education: A hybrid approach to interpreting data in practitioner research. *International Journal of Qualitative Methods*, *19*, 160940692091881. https://doi.org/10.1177/1609406920918810

Young, J. C., Boyd, B., Yefimova, K., Wedlake, S., Coward, C., & Hapel, R. (2020). The role of libraries in misinformation programming: A research agenda. Journal of Librarianship and Information Science, 53(4), 539–550. https://doi.org/10.1177/0961000620966650