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The Effect of Librarians' Face Masking on Child Patron Perceptions of Comfort Asking for Search Assistance in a Public Library

INTRODUCTION:

Children's librarians are in the "intermediary role of matching reader to book" (Ross, 2001); they facilitate patrons' information retrieval but information seeking in-person on the shelves is a bit of a research "black box" generally (McKay, 2019) and specifically in the post-COVID-19 public health context. While the timing and nature of a library's COVID-19 implemented precautions and pandemic response vary by political leaning of municipality (Lund et al., 2022), there is evidence with the now "forever virus" (Brillant et. al, 2021) that intermittent masking will continue as a safety measure during periods of concentrated COVID-19 infection.

However, this could be a concern for librarians interacting with child patrons given the potential for mask-wearing to negatively impact relational communication between adult and child (Green et al., 2021). One hypothesis is that librarians' masking and occluded faces will negatively impact child-patrons' information-seeking conversations due to disrupting holistic face processing (Green, 2021). The alternative hypothesis is that there will be no effect if mask-wearing is not what bears on relational dynamics but instead the *change* of doffing or donning masks in front of the intended audience (Tronick & Snidman, 2021). This research study aims to investigate the impact of librarians' face masking on child patron perceptions when seeking search assistance in a public library. It adds to a thinner literature in research with child patrons and clarifies potential barriers to effective communication between librarians and young children accessing and information-seeking in the public library.

LITERATURE REVIEW:

Masking as a public safety response in the wake of COVID-19 may have consequences for relational communication between librarian and child patron given how librarians must interact and engage with patrons to match reader to book, especially in communities with high rates of parental illiteracy (Mtshali, 2023).

<u>Considering the Hypotheses:</u>

One hypothesis is that masking among librarians may create barriers to effective communication with child patrons, potentially impacting the perceived comfort levels of children when seeking assistance with their information needs. Green et al. (2021) reviews an ecological theory of development that suggests that preferences for certain "configurations" of facial features are biologically determined: suggesting that masking's disruption could impact typical emotional development due to disrupting this configuration.

This concern around the pediatric reaction to "faceless" healthcare providers in a hospital setting was understudied and a concern even before the COVID-19 pandemic (Beck et.al., 2004). However, as Green et al. (2021) notes, eyebrows that are "powerfully expressive" have not typically been considered and

measured for effect in facial configuration research. An alternative hypothesis could be that eyebrow expressiveness in the face compensates for what masks cover, therefore having no effect on children's relational communication and information seeking with librarians.

It could also be that prior research citing the so-called negative effects of masking on young children has faulty argumentation. Often, these studies are parent-report focused, not child-report focused and raise anecdotes of parental anxiety without empirical backing of the same (Green et al., 2021). Sometimes, the argument around the harms of masking fail to adequately consider the null or alternative hypothesis as in Beck et. al. (2004). Alternatively, studies that seem empirically grounded, can have discordant findings.

For example, Stajduhar et al. (2022) found that in children "holistic processing, a hallmark of face perception, was disrupted for masked faces" and noted a "profound deficit in face perception abilities" in children and adults when tasks were adjusted for difficulty. However, Stajduhar et. al. (2022) measured holistic face processing via an inverted-face paradigm typical in psychology. This establishes that inverted faces are harder to interpret versus upright faces and is a good measure for theoretical studies around cognitive recognition of difference.

However, it is unsound to rely on this measure in applied settings around children's perceptions of masking and face processing as a child will never encounter an inverted face in real life; further, an inverted face is not equal to a masked face in markers of equivalent *difference*.

And, relatedly, Tronick & Snidman (2021) found that between parents and infants, while the point of change, where masks were put on and taken off affected the child's interaction, the period of masking did not, which suggests that the Stajduhar et. al. (2022) study may have captured not global impairment in holistic face processing but some novelty effect between switching from an upright face and an inverted one.

This study goes beyond previous studies' hospital contexts and provides empirical insights into the effects of implemented safety measures in a naturalistic setting—the masked librarian-child interaction—through administering a survey of child patrons in a public library. It also shifts perspective in research studies that have often focused on children's perceptions of themselves wearing masks (Assathiany et al., 2021) to explore children's perceptions of the masked other while being child patron-centered in its survey data collection and analysis.

Children's Information Seeking Behavior:

Systematic reviews of children's information-seeking behavior are limited or dated (Mansoor, 2002) and focus often on children's electronic catalog search behavior (Borgman et. al, 1995) or internet search (Vanderschantz & Hinze, 2019) that is not human-mediated; meanwhile, children identify barriers to their information search in needing more human support, with 23% trusting adults for information in the library but also reporting feeling ignored or feeling that the adults cannot help them when those adults are teachers or parents (Breslin-Davda et al., 2022). Andrew and Dixon (2004) allude to these "other people" who "play a key role in meeting first schoolers' information needs, and an interpersonal approach may be the first method that comes to mind for many youngsters, partly perhaps because conversation has become a natural means of communication by this point" (33). This suggests and places the unmentioned librarian as the designated adult resource in the library setting who can support children in information retrieval. This study contributes to shedding light on the "black box" of in-person

shelf browsing and information seeking (McKay et al, 2019) to understand the librarian-child patron relationship in the context of mask wearing.

This study focuses on public libraries and not school libraries since it could be construed that familiarity with the school librarian may differently affect results of masking versus not-masking during the information-seeking interaction. Further, working in public libraries might make it more possible to obtain a representative sample as a public library serves a broader range of children, families, ethnicities, and socioeconomic needs than may a single school library. Further, although the study was conducted in a small school, it is meaningful for this study that when students were surveyed, while their responses and perceptions around school libraries were constructive, "No participant referred either to the work of librarians or to the value of libraries in enabling the user to find information in support of personal interests," which would suggest that students do not perceive information intermediation in school libraries and therefore may not encounter barriers in the same, masked librarian or otherwise (Kenneth-Shenton, 2014). Separately, Merga (2020) suggests that this devaluing of school librarians' roles can come from "low teacher valuing, low student engagement, skills and motivation, issues with parental support, limited space and constrained budget."

Child-Centered Qualitative Inquiry

Finally, this study is consciously child-centered in its approach as previous studies have shown that there is a gap between adults and children where teachers (Moore, 2001) and adults broadly assume that children have high information-seeking confidence while children themselves report that they have difficulty and a different a different understanding as to what information seeking might mean (Barriage, 2019). Breslin-Davda (2022) found that 100% of parents and 82% of teachers (17 of 17 and 14 of 17 respectively) considered the children in their care to be successful information seekers, commenting that "their children/pupils 'would find the information', 'definitely find out', and 'won't stop' until information is obtained" (7).

Meanwhile, 40% of surveyed children did not consider themselves confident seekers of information and reported needing adult information support and intermediation (32 of 81 surveyed). Therefore, it is important that this study shift focus and address barriers to information seeking from a child-centered approach. Breslin-Davda (2022) identify that "Seventy-one of one hundred thirty-eight child participants (51%) indicated that they have concealed information and/or information needs from others," with some children expanding on feelings of shyness or worrying that questions were silly. To mitigate these known barriers to information intermediation and to try to isolate the effect of masking, this study will encourage the librarian to walk around the library and collect survey information when approached and place stools around the library so that the librarian can be at children's eye level.

Considering Child Temperament

Child temperament can be a mediating factor in studies correlating two other independent and dependent variables. For example, Ju et. al, (2022) measured the effect of household environment on childhood emotional eating and also singled out temperament for its independent effect. As Dr. Stone and colleagues (2022) mention in another study about early childhood emotional eating, generally about temperament as a measure, "temperament is implicated….but not well-investigated."

De Bondt & Bus (2022) found that temperament mediated the long-term effectiveness of a book-reading intervention, and this may be true, too for how well young children accept their eyeglasses per anecdotal evidence from the Spectacle Prescribing in Early Childhood study that is currently in progress.

However, temperament questionnaires are often lengthy and parent-focused, therefore hard to incorporate in qualitative interview settings with children. The Sleddens et. al., (2013) abbreviation of a temperament scale is one of the shorter validated questionnaires, in that it consists of three questions, in vignette form, where a parent indicates which vignette fits the child's temperament. Because these options are not child-focused and a vignette scale for temperament measure may distract the child from the narrative of the interaction with the librarian, a single picture-scale based temperament question was developed for this survey/interview study that the child can answer about himself or herself.

PROCEDURES

Study Design: This research will employ a within-subject design, where the same librarian interacts with child patrons in both masked and unmasked conditions. This design minimizes confounding variables related to different librarians and focuses on the impact of face masking on child patron perceptions.

The librarian will be masked for 50 child interactions and unmasked for 50 child interactions to have an equal number of children in each group. This would be the same count for the re-test in 3 months.

Participants: The study will focus on child patrons aged 6-12 in public libraries across Tucson, Arizona. A purposive sampling method will be employed to ensure diversity in age, gender, and socio-economic backgrounds. Children with or without another adult actively seeking the assistance of a librarian will be surveyed, while children accompanied by parents or guardians to the library but who do not approach a librarian will be excluded. Children will not be excluded from participation for reasons of race, ethnicity, disability or another protected characteristic, and parent consent and child assent will be collected. If *both* parties do not agree to taking part in the survey and the research study, this will be counted as having declined participation. Participants will be notified of the study with fliers posted around the physical library and digitally through the public library digital noticeboard.

Measurement: To measure the dependent variables perception—comfort, emotional response, and communication during librarian-child interactions—a child-friendly oral 5-question survey will be developed with open-ended questions that consider guidance in qualitative research with children provided by Ponizovsky-Bergelson (2019). Per Ponizovsky-Bergelson (2019), open ended questions or ones that ask "why" encourage children to share their own opinions and reduce the perception that children can have that questions are a "test" where adults already know the answers.

The child will be asked the 5 questions after interacting with the study librarian. (See Appendix for question set). The sequence has been kept short to allow a child to expand if needed and reduce child burden. Question 1 asks the child to explain what the interaction was. Questions 2-4 measure the identified dependent variables (comfort, emotional response and communication), and Question 5 has the child identify their temperament from a series of pictures. The order of questions 2-4 will be counterbalanced to reduce order effect. Children will be given the option to answer the questions directly or draw a picture or play with kinetic sand or modeling clay while answering the questions. The drawings or clay creations will not be analyzed for content.

Poole & Dickinson (2014) note that “comfort drawings” do not influence study design or response result quality when working with children in investigative interviews and remain open to their benefit in research with children. Yet, more recently, Ponizovsky-Bergelson (2019) review research that shows that allowing children to draw or mediating a questionnaire through play can facilitate interview participation by reducing environmental barriers—as may be found in a library-grounded research study.

To be able to collect some quantitative information, children will be asked to rate on a Likert-scale whatever emotion they might describe in the question for each variable, with 0 being “not really a lot”, 1 being “a little bit”, 2 being “in the middle” and 3 being “I really feel this a lot.” For example, a child could say when asked about emotional response that they felt “excited when the librarian said there was a book about goblin” and then “I really felt this, felt excited (3).”

Before being used with study children, the survey instrument will be piloted with a small convenience sample of children to ensure and amend for clarity and appropriateness. Validity and reliability of assessment will be addressed by a) having two evaluators code and agree on categorizations for participant qualitative responses and b) a retest of the study occurring within 3 months of the initial data collection so that stability over time may be considered.

Data-Collection Plan:

Recruitment and Consent: Approach families visiting the public library as they enter. Briefly explain the purpose and procedures of the study to the child participants in an age-appropriate manner. Ensure the child's understanding and address any questions or concerns. Seek written consent from parents or guardians and child assent. Note that children are being consented upon entry but are then instructed to use the library as normal and 'forget' about the study. The child will only be asked follow-up questions about their experience only if they happen to approach a librarian for information intermediation during the visit and have consented to study participation. Explain the voluntary nature of participation, ensure confidentiality, and inform parent that it is okay to withdraw participation at any point.

Library Environment Setup: Ensure the library environment is conducive to the study and there is a separate and inviting area where children can respond to questions and play or draw. Identify the librarian who will be masked for half of the participants and then unmasked. Librarians will be briefed on the study and their roles in both masked and unmasked conditions. A way to do this for librarian ease is to set multiple data collection days with some set as masked days and others set as unmasked days until the sample size is reached. Librarians will interact with participants as they normally would, providing search assistance.

Orally Delivered Survey: Administer an orally-delivered survey immediately after each librarian-child interaction including the picture-scale temperament question. Use child-friendly language and engage participants in a conversational manner. As the survey-delivering researcher, sit at the child's eye-level and ask follow-up questions, "Can you tell me more?" or "Anything else?" until response saturation when the child shakes their head, starts focusing on something else, or otherwise indicates being done. Allow children to comfort draw or play with modeling clay during the survey to facilitate self-expression. As the researcher, you can also use the modeling clay or comfort drawing tools to play with the child

and encourage conversation and engagement. This can reduce a power differential that the child might perceive.

Counterbalancing: Implement a counterbalancing technique for survey questions administered to each child to control for order effects.

Response Collection: Record responses using a digital video recorder. Video recording will not be used for this study but can be used for future studies that integrate child co-speech gestures into semantic meaning of child responses. Transcribe responses for qualitative text analysis.

ANALYSIS

Qualitative: A content analysis will be conducted with two separate coders reviewing child responses to each open-ended question. The content analysis can emerge general themes that will be summarized by count and frequency.

Quantitative: For each of the Likert-scale questions corresponding to the open-ended responses, we will compute the mean and standard deviation of the responses separately for the masked and unmasked conditions. Independent sample t-tests will then evaluate whether the observed differences in means are statistically significant, indicating whether there are significant variations in how children perceive comfort, communication, and emotional response when the librarian is masked compared to when the librarian is unmasked.

Effect sizes can be calculated to quantify the practical significance of any observed differences. This analysis approach ensures that we not only identify statistical significance but also assess the relevance of these differences in the context of child experiences in public libraries.

ESTIMATED SCHEDULE:

Note: The timeline assumes project approval and a study start of January 2024

January 2024: Project Initiation

- Finalize research protocol, study design, recruitment materials, consents, and letters of support from library partners for ethics application.
- Update lit review on child perceptions, librarian interactions, and masking effects for paper draft.
- Obtain necessary approvals from ethics review board.

February 2024: Librarian Training, Survey Pilot

- Identify and train librarians who will participate in study and explain masked and unmasked roles.
- Solicit feedback from librarians on study protocol and how best to implement at their branch.
- Pilot survey questions with convenience sample of children and amend as needed.

May 2024 to October 2024 – Data Collection

- Collect n = 50 masked interactions and n= 50 unmasked interactions for both test and retest (for validity)
- Monitor and document any unforeseen challenges or adjustments needed during data collection.
- Develop a database for controlled data entry and begin data entry.

October to November 2024: Data Analysis – Primarily Quantitative

- Begin quantitative data analysis of Likert-scale responses from children.
- Document patterns and relationships.
- Complete data entry and cleaning for Qualitative responses.

December to January 2024: Data Analysis - Qualitative

- Assign codes to collected data based on response content, reconcile codes with partner, complete thematic analysis.

February to April 2024: Writing and Convening

- Write up comprehensive interpretation based on both qualitative and quantitative findings
- Identify patterns, divergences, and discrepancies to then write and finalize research report.
- Write a lay summary of research or newsletter with findings or make a video short to share with library partners and participants.

APPENDIX: SURVEY QUESTIONS

- Question 1 – Summary of Interaction | "Can you tell me what you talked to the librarian about?
- Question 2 – Comfort | "Think about when you were talking with the librarian. How did safe or relaxed were you when you were asking the librarian your question *when they had the mask on*?" (unmasked would exclude italicized)
- Question 3 – Communication | "Tell me about how you and the librarian talked. Did you find it easy or hard to understand each other *when they had the mask on*?" (unmasked would exclude italicized)
- Question 4 – Emotions | "What was going on inside your head when you were taking to that librarian? What emotions or mood did you feel?"

Question 5 – Temperament | ""Everyone is different, and we all have our own special way of being. If you could pick a picture that shows how you are most of the time, which one would it be? Look at these pictures and choose the one that feels like you the most." *Provide a set of simple line-drawn pictures representing different temperaments (e.g., a smiling face for happy, a calm sun for peaceful, an energetic burst for active, etc.)*

- The 'emphasis' question to be asked after each of questions 2- 4, on a Likert scale, administered conversationally as this example response for Question 4….

  Oh, that's helpful for me to know that you felt a <u>little calm</u>. Was it:
  a <u>little bit calm</u>
  somewhere in the middle feeling <u>calm</u>
  or you really felt <u>calm</u> a lot?
  or oops, never mind, it <u>wasn't like feeling calm</u>?

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