

Original Article

## Survey of public library use in the Ambulatory Clinic in the Children's Hospital Winnipeg

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### Abstract

**Introduction:** Recent studies highlight synergies for families receiving early childhood literacy support from their health care provider and public library, with more reading at home and higher quality book-sharing interactions. Our primary objective was to determine the percentage of Children's Hospital Winnipeg Ambulatory Clinic's patients who had ever used a public library. The clinic has a longstanding early-childhood literacy program and serves remote communities and low-income Winnipeg families.

**Methods:** A structured survey was administered to parents or legal guardians by the first author. It explored library barriers and covariates that might affect library use. Analysis included descriptive statistics and a logistic regression model for predictors of library use.

**Results:** Ninety-seven nearly consecutive surveys were administered, half prior to the COVID-19 pandemic. Most respondents were female, from Winnipeg, and in the two lowest neighbourhood income quintiles. Roughly half (46.4%) of children had used a library. Most respondents wanted health care providers to promote literacy and provide information about public libraries, and more supported in-clinic distribution of books. The number of children per household positively predicted library use, possibly a proxy for experience with community resources. About 2/3 of respondents believed that library fines should be abolished. Most identified other barriers, for example, inconvenient hours, distance, or concerns about COVID-19.

**Conclusion:** Less than half of surveyed families used public libraries, citing multiple barriers, including fines. Moreover, not all health care providers can offer new books and anticipatory guidance. Clinics that promote use of public libraries may therefore represent a low-cost, stand-alone alternative.

**Keywords:** *Libraries; Literacy; Social class*

The 'Read, Speak, Sing' position statement from the Canadian Paediatric Society (CPS) highlights how health care providers can improve early childhood literacy (1). Unfortunately, roughly 50% of the Canadian working population have such low literacy skills that they cannot fully participate in a knowledge-based society (2). Given Manitoba's poor literacy performance,

the Ambulatory clinic (Clinic W) at the Children's Hospital Winnipeg has actively promoted literacy for the past 5 years through REsidents for ReADing (READ), patterned after the CPS program and Reach Out and Read (ROR), endorsed by the American Academy of Pediatrics (3–5). At the start of their rotation, trainees receive a 30-minute session from our

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librarian about supporting parents in daily reading. Moreover, free, brand-new, age-appropriate books and anticipatory guidance are provided to patients by residents at all clinic visits. On display, we have paper copies of the Winnipeg Public Library (WPL) application and a map of WPL locations.

Clinic W is a primary care clinic serving 2 main patient populations, the first in Winnipeg's 'North End'. These families are often of lower socioeconomic status (SES), Indigenous, and without access to nearby freestanding WPL, although there are mobile libraries visiting eight times per month (6). A 2010 survey of Indigenous youth and adults in Winnipeg suggested that only 50% used the WPL (7). The second clinic population are from remote Manitoba and eastern Nunavut, where there are typically no public libraries, although books may be borrowed from schools.

Two recent studies have confirmed that families receiving literacy support from both their paediatrician and their local library undertake more reading with their children and have higher quality book-sharing dynamics (8,9). Moreover, because not all health care providers can afford new books, we wanted to better understand how libraries were being used and how they might be better integrated into health care providers' efforts to promote daily reading (10).

Our primary objective was to determine how many children attending Clinic W used a public library. Secondary objectives were to examine barriers, such as distance to their closest public library and families' knowledge about library services.

## METHODS

### Design

This was a structured interview study using a survey that was administered to all parents or guardians by the first author (JB). It was created by modification of questions from two existing surveys, previously administered to Indigenous young adults in Winnipeg and from Indiana (7,11). See [Supplementary Appendix 1](#) for survey.

The adults were invited to participate while waiting for their appointment regardless of the age of the child. Families were excluded if they had undertaken the survey, were not fluent in English, or if the adult was not a parent or guardian. It lasted ~5 minutes; at the conclusion, respondents were provided with assistance in obtaining a WPL library card application and information about their closest library if they wished. As compensation, the family selected a new book in English or a Manitoba Indigenous language, the latter developed in collaboration between our clinic and Canadian children's author Mike Parkhill (12).

The recruitment period straddled the COVID pandemic with 50% of the respondents recruited prior to the COVID pandemic (December 2019) and 50% in August 2020 (pandemic).

Our primary outcome was to determine if children attending the clinic had ever used a public library. To explore the determinants of library use, we collected other variables (e.g., gender of caregiver, number of children in household, education). Participants self-reported knowledge about a range of library services (See [Table 1](#) for details).

### Statistics

Descriptive statistics were presented as means or proportions and 95% confidence intervals (CI) or medians and interquartile range (IQR) as appropriate. Wilcoxon Rank Sum tests were used to compare continuous variables by library user group; Fisher Exact tests were used to evaluate differences in proportions. A logistic regression model examined potential predictors of library use, with appropriate regression diagnostics.  $P < 0.05$  was considered statistically significant. STATA 15 (College Station, TX) was used.

Six-digit postal codes were collected with each survey and used to assign a census dissemination area (DA) to each respondent. DAs represent the smallest geographic unit reported by Statistics Canada, each consisting of 400 to 700 individuals. In a population study of Manitoba children, we have reported on SES gradients in 19 of 20 different paediatric health outcomes and identified neighbourhood income quintile (IQ) as the most sensitive DA-level indicator (13). Statistics Canada's Postal Code Conversion File (PCCF+) (13–15) was used to assign individual DAs, before tax IQ, and map co-ordinates (longitude and latitude). For privacy reasons related to smaller rural neighbourhoods, DAs were assigned for 87 of 97 respondents. Each public library in the province was similarly assigned map coordinates and walking or driving distances calculated between each respondent and the closest library using the Google Maps Application Programming Interface (API). All assignments were done in R 4.0.0 with the *googleway* package (16,17).

### Sample size

With an expected proportion of 0.5 (50% library use), a CI width of  $\pm 10\%$ , and confidence of 95%, the required sample size is 96.

### Ethics

The University of Manitoba Health Research Ethics Board approved this study; caregivers provided verbal consent at the start of the survey.

## RESULTS

Ninety-eight surveys were administered, with one individual unable to complete the survey leaving 97 nearly consecutive survey respondents. Most were female (82.8: 95%CI 71.3

**Table 1.** Replies to questions about library access, services, barriers, and ways to promote health care provider and library partnerships

Variable	All N=97	User N=45	Non-user N=52	P-value
Have a public library in community (self-reported)				
No	18 (18.6: 11.4–27.7)	6 (13.3: 5.1–26.8)	12 (23.1: 12.5–36.8)	
Yes	59 (60.8: 50.4–70.6)	34 (75.6: 60.5–87.1)	25 (48.1: 34.0–62.4)	0.04
In school	6 (6.2: 2.3–13.0)	2 (4.4: 0.5–15.1)	4 (7.7: 2.1–18.5)	
Do not know	14 (14.4: 8.1–23.0)	3 (6.7: 1.4–18.3)	11 (21.2: 11.1–34.7)	
Distance to library (walking, in km)	Median: 1.6 IQR: 1.0–2.6	Median: 1.5 IQR: 0.9–2.4	Median: 1.7 IQR: 1.2–2.6	0.4
Knowledge of library services				
No	29 (29.9: 21.0–40.0)	3 (6.7: 1.4–18.3)	26 (50.0: 35.8–64.2)	<0.001
Yes	68 (70.1: 60.0–79.0)	42 (93.3: 81.7–98.6)	26 (50.0: 35.8–64.2)	
Frequency of use				
Weekly	10 (10.3: 5.1–18.1)	10 (22.2: 11.2–37.1)	n/a	n/a
Monthly	14 (14.4: 8.1–23.0)	14 (31.1: 18.2–46.6)		
Yearly	12 (12.4: 6.6–20.6)	12 (26.7: 14.6–41.9)		
Do not know or infrequent	9 (9.2: 4.3–16.9)	9 (20.0: 9.6–34.6)		
Think that library does good job advertising				
No	45 (46.4: 36.2–56.8)	18 (40.0: 25.7–55.7)	27 (51.9: 37.6–66.0)	0.05
Yes	48 (49.5: 39.2–59.8)	27 (60.0: 44.3–74.3)	21 (40.4: 27.0–54.9)	
Do not know	4 (4.1: 1.1–10.2)	0 (0.0: 0.0–7.9)	4 (7.7: 2.1–18.5)	
Believe that library card is required to enter library				
No	52 (53.6: 43.2–63.8)	30 (66.7: 51.0–80.0)	22 (42.3: 28.7–56.8)	
Yes	33 (34.0: 24.7–44.3)	11 (24.4: 12.9–39.5)	22 (42.3: 28.7–56.8)	0.06
Do not know	12 (12.4: 6.6–20.6)	4 (8.9: 2.5–21.2)	8 (15.4: 6.9–28.1)	
More likely to use library if helped to located				
No	26 (27.1: 18.5–37.1)	7 (15.9: 6.6–30.1)	19 (36.5: 23.6–51.0)	0.005
Yes	43 (44.8: 34.6–55.3)	18 (40.9: 26.3–56.8)	25 (48.1: 34.0–62.3)	
N/A	27 (28.1: 19.4–38.2)	19 (43.2: 28.3–59.0)	8 (15.4: 6.9–28.1)	
N=96				
More likely to use if helped with library application				
No	28 (29.2: 20.3–39.3)	8 (17.8: 8.0–32.1)	20 (39.2: 25.8–53.9)	
Yes	30 (31.3: 22.1–41.5)	7 (15.6: 6.5–29.5)	23 (45.1: 31.3–59.7)	<0.001
N/A	38 (39.6: 29.7–50.1)	30 (66.7: 51.0–80.0)	8 (15.7: 7.0–28.6)	
N=96				
Would be more likely to use if there were no fines				
No	33 (34.4: 25.0–44.8)	18 (40.0: 25.7–55.7)	15 (29.4: 17.5–43.8)	
Yes	62 (64.6: 54.2–74.1)	27 (60.0: 44.3–74.3)	35 (68.6: 54.1–80.9)	0.2
Do not know	1 (1.0: 0.0–5.7)	0 (0.0: 0.0–7.9)	1 (2.0: 0.0–10.4)	
N=96				
Limitations to use				
No	20 (21.1: 13.4–30.6)	10 (22.7: 11.5–37.9)	10 (19.6: 9.8–33.1)	0.4
Yes	71 (74.7: 64.8–83.1)	31 (70.5: 54.8–83.2)	40 (78.4: 64.7–88.7)	
Do not know	4 (4.2: 1.2–10.4)	3 (6.8: 1.4–18.7)	1 (2.0: 0.0–10.4)	
N=95				
Talk to parents of newborn about				
No	14 (14.6: 8.2–23.3)	5 (11.1: 3.7–24.1)	9 (17.7: 8.4–30.9)	
Yes	78 (81.3: 72.0–88.5)	40 (88.9: 75.9–96.3)	38 (74.5: 60.4–85.7)	0.1
Do not know	4 (4.2: 1.1–10.3)	0 (0.0: 0.0–7.9)	4 (7.8: 2.1–18.9)	
N=96				
Library is important				
No	3 (3.1: 0.6–8.9)	1 (2.2: 0.1–11.8)	2 (3.9: 0.5–13.5)	1.00
Yes	92 (95.8: 89.7–98.9)	44 (97.8: 88.2–99.9)	48 (94.1: 83.8–98.8)	

**Table 1.** Continued

Variable	All	User	Non-user	P-value
	N=97	N=45	N=52	
Do not know N=96	1 (1.0: 0.0–5.7)	0 (0.0: 0.0–7.9)	1 (2.0: 0.0–10.4)	
Have books at home				
No	5 (5.3: 1.7–11.9)	0 (0.0: 0.0–8.0)	5 (9.8: 3.3–21.4)	0.04
Yes N=95	90 (94.7: 88.1–98.3)	44 (100.0: 91.6–100.0)	46 (90.2: 78.6–96.7)	
Helps if health care provider talks about reading				
No	16 (16.7: 9.8–25.7)	7 (15.6: 6.5–8.9)	9 (17.7: 8.4–30.9)	
Yes N=96	77 (80.2: 70.8–87.6)	38 (84.4: 70.5–93.5)	39 (76.5: 62.5–87.2)	0.3
Do not know	3 (3.1: 0.6–8.9)	0 (0.0: 0.0–7.9)	3 (5.9: 12.3–16.2)	
Helps if health care provides books				
Yes N=96	96 (100.0: 96.2–100.0)	45 (100.0: 92.1–100.0)	51 (100.0: 93.0–100.0)	1.0

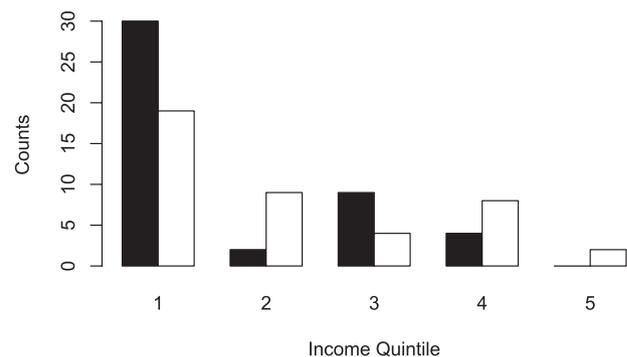
IQR interquartile range; N number; n/a not applicable, (%: 95% confidence intervals).

to 91.1), had some post-secondary education and lived in Winnipeg; 2/3 were in the lowest 2 neighbourhood IQ (#1 and 2) (Supplementary Appendix 2, Supplementary Table S1).

Approximately half of respondents were library users (Supplementary Appendix 2, Supplementary Table S1: n=45, 46.4%, 95%CI: 41.5 to 51.3). There were no statistically significant differences between library groups by sex or education. However, we noted that users had a significantly higher number of children (median 3 versus 2, P=0.04), were more likely to live in Winnipeg, and had higher neighbourhood IQ (P=0.01) (Figure 1).

Although 2/3 of caregivers reported access to a public or school library (Table 1), non-users were less likely to know if this was the case, with more than one in five unable to answer the question (21.2%, 95%CI: 11.1 to 34.7). Library proximity by either walking or driving was relatively close (median 1.6 km) and did not differ by group. Users reported that their child typically used the library once a month. When evaluating knowledge of services (e.g., access to books, computers), there was a marked difference between users (93.3%: 95%CI: 81.7 to 98.6) having a greater knowledge than non-users (50.0%: 95%CI: 35.8 to 64.2, P<0.001). In both groups, only 50% believed that the library did a fair job advertising their services.

Unfortunately, about 1/3 of respondents incorrectly believed that a library card was needed to enter the library, with no difference by group. Many felt that they would more likely use the library if someone showed them the location of a nearby library or helped them complete an application form. Non-users were significantly more likely to favor these initiatives. The majority of both groups (~2/3) agreed that library use would increase with abolition of fines. All outlined barriers to use, including distance, inconvenient hours, or the busyness of their lives (data not shown). In surveys from the COVID-19 era, it was also cited as a barrier.



**Figure 1.** Frequency of income quintile by library user status: Black bars - non-users, white - users.

Both groups agreed that health care providers should offer books (100%) and talk about reading at well-child visits (80.2%, 95%CI: 70.8–87.6 -no difference between groups). Similarly, 81.3% (95%CI: 72.0–88.5) believed that parents of newborns should be informed about public libraries.

Supplementary Appendix 2, Supplementary Table S2, presents an unadjusted logistic regression exploring the relationship between number of children in the family and library use and an adjusted model adding IQ and walking distance to the nearest library as potential confounders. In the unadjusted model, for every increase in family size by 1 child, respondents were 1.32 (OR 95%CI: 1.03 to 1.72, P=0.03) more likely to use the library. This significant finding persisted after adjustment with IQ no longer a significant predictor.

## DISCUSSION

Similar to a WPL survey of Indigenous youth and adults, approximately 50% of the respondents in our Ambulatory

Clinic in Winnipeg reported using the public library (7). We were somewhat surprised that so many caregivers reported such a high use of the library because most families in the clinic live in an area without a 'bricks and mortar' library or are from remote areas where there are few public libraries. This rate (50%) resembles the most recent national statistics (2012), where 41% of Canadians are active public library cardholders with an additional 20% having a card, but not using it in the last 3 years (18). Canada and the USA appear to lag behind other jurisdictions, such as Prague and the Zih region of the Czech Republic, which report as many as 76% of the population actively using the library (19–21). This may be a near-optimal situation, since the Czech Republic has the third highest number of libraries per capita in the world. Interestingly, despite Canada's vast geographic size, 95% of Canadians had access to a local public library in 2010 while 93% of schools had libraries in 2004, suggesting that physical barriers should not be a key limitation (18).

When looking for factors to distinguish individuals who use libraries, we were surprised when our adjusted regression model showed that the number of children in the family increased the odds of use. There appear to be no other data on this theme in the literature. In the Czech survey exploring the 'value of library services', the number of children was not a significant predictor (19). We wonder if number of children is a proxy for age of the respondent or experience with community services (e.g., school or local support of libraries). It does suggest that brand-new families might benefit from information about community resources, such as the public library. Almost all respondents would appreciate such advice at newborn visits. A good model is Nova Scotia ('Read to Me'). For over 20 years, a volunteer health care professional has discussed childhood literacy at the bedside of all newborns in the province; the family is also given a collection of new books and a first library card application (22).

Interestingly, two recent cross-sectional studies demonstrate an important synergy when a family used both the library and received ROR-type book guidance and free-books at the physician's office (8,9). The authors found statistically significant associations with more reading, reading a wider variety of books, and having higher quality book-sharing interactions at home (8,9). Paper books are still recommended for young children because they appear to better stimulate and encourage dialogic reading (having a dialogue with the child, such as asking questions to better explore the text) compared to e-books, although the data remain controversial (23,24). For many reasons, the CPS advocates no screen time before age 2 years, and we generally prefer to promote literacy using paper books (25). However, clinics may find it too expensive to provide brand-new, age-appropriate books for CPS-type programs (10). Our study suggests that we should at least discuss options, such as local libraries, perhaps filling in application forms,

finding nearby locations, and providing guidance about dialogic reading ('a prescription to read'). Our families certainly seemed keen to engage, as have participants in at least one other study (8).

Additionally, we may need to spend time dispelling myths about this public institution. Unacceptably, 1/3 of respondents believed that a library card was required to enter the library. Elimination of fines is gaining traction, particularly during the COVID-19 pandemic. Roughly 2/3 of our respondents favored elimination, and many large cities have already done so, including Winnipeg (see (26) for a full list) (27–29). For some families, significant economic hardships may turn fines into barriers that preclude library use (7). Other surveys also report that in general, people do not appreciate all the services available in the library and blame the library for inadequate 'messaging' (11). Better education might also assist the more than one in five non-users who did not know whether their communities offer a public library. Surprisingly, we did not find a significant difference in distance to local libraries although distance and inadequate opening hours are often cited as perceived barriers (30).

Over several decades, public libraries have created a number of important partnerships with public schools, summer camps, and medical centre libraries to provide health information (31–33). There are a few descriptive manuscripts outlining some clinic-public library synergies, but it is not clear how frequently public libraries and clinics partner. In these few instances, public library staff or volunteers read in the clinic (great role modeling), provide books, and discuss local library activities (e.g., 'story time') (34). Perhaps it is time to look for stronger links between health care offices and libraries; even low-cost initiatives such as having a map of local libraries or application forms may remind us to discuss this option. Our respondents endorsed this approach.

An opinion piece in 2005 from a head librarian in Indiana suggested that those of lower SES needed extra assistance accessing library services (35). In turn, it was those of lower SES who were non-users in our survey, suggesting that some families may need extra assistance in the clinic to understand the wealth of services that the library can provide. We know that children from lower SES have more language delays at school entrance and struggle with literacy skills compared to those from higher SES (4). All health care providers can leverage the relationship of trust they build with families to talk to parents about the importance of reading to their pre-school children. Perhaps it is time to take our discussions a step further and embrace community literacy resources.

The strengths of our study include that this survey was undertaken outside of the library; many user surveys have selection biases because they were undertaken in a library. We were able to obtain information from a broad swath of Manitoba families using questions from previously administered surveys (7,11). Additionally, much of our focus revolved around pre-school

children where other surveys have looked at engagement with older individuals (11,36). Unfortunately, we are not sure how generalizable our study is to similar early childhood literacy programs in Canada because our clinic has a mandate to provide general paediatric care for this impoverished inner-city area and remote fly-in northern communities. Due to practical clinic limitations, we could not obtain some individual information (age of caregivers or children, car ownership, parental use of library, etc.) that might have provided additional insights. For ethical reasons, we were not allowed to capture the postal codes or family characteristics of those that refused or were unable to fully respond. Other potential biases are selection (interviewing only those adults who are fluent in English), recall, or desirability biases.

In conclusion, much could be done to improve the use of public libraries for those who attended the Ambulatory Clinic in Winnipeg, such as actively engaging families (particularly newer parents) in understanding location and services of public libraries and assisting with completion of library card applications. Ideally, these steps should accompany existing ROR- or CPS-type programs. Despite their effectiveness, fiscal constraint in purchasing new books may warrant further attention to other standalone, low-cost, early-childhood literacy programs and resources available in public libraries.

## SUPPLEMENTARY DATA

Supplementary data are available at *Paediatrics & Child Health* Online.

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