REVIEW

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Public Libraries: A Community-Level Resource to Advance Population Health

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Abstract

Policy makers and public health practitioners rarely consider public libraries to be part of the health system, even though they possess several characteristics that suggest unrealized potential to advance population health. This scoping review uses an adapted social determinants framework to categorize current health-related work conducted by public libraries in the United States and to discuss libraries' potential as 'meso-level' community resources to improve population health. Our discussion of libraries contributes to scholarship on place-based health disparities, by emphasizing the potential impact of institutions that are modifiable through social policy—e.g., parks, community centers, schools—and which have a conceptually clear or empirically documented relationship to health.

Keywords Public libraries · Population health · Place-based health disparities · Meso-level

Introduction

Public libraries in the United States are civic institutions that perform critical functions extending far 'beyond books' [1]. However, policy makers and public health practitioners rarely consider libraries to be community-level resources that can advance population health or address health disparities, despite several characteristics that could render them highly effective at doing so [1]. With an estimated 17,000 public libraries nationwide and four million visits each day, [2] libraries have extensive population reach. Furthermore, unlike other service-providing institutions (e.g., medical institutions and certain social welfare institutions), libraries are widely trusted by the public [3]. These factors make them an opportune space for the coordination and delivery of health-promoting services.

This scoping study examined public libraries' potential as a community-level resource for reducing place-based health disparities. The U.S. has some of the largest health disparities in the world: [4] life expectancy varies by up to 20 years between some counties [5]. Within New York City, for example, life expectancy in Brownsville, Brooklyn is 74 compared to 85 in the Upper East Side, [6] a difference equivalent to living in the U.S. versus Brazil [7]. Public libraries are well positioned to address these stark disparities. Libraries are paradigmatic of a community-level resource. Over 95% of Americans live within a public library service area [2] and diverse sectors of the population already use public libraries: in the last year, half of Americans with annual incomes under $30,000 visited a library, as did half of African Americans and nearly two-thirds of Americans with college degrees [3]. Yet unlike parks, transportation, or environmental health [8], libraries are rarely included in explicit plans to reduce neighborhood level health disparities.

In this scoping study, we first describe the theoretical frameworks that organizes this paper. We then outline ten domains through which libraries in the U.S. currently promote population health (Table 1). For each domain, we provide examples of past and on-going services provided by U.S. public libraries (Table 2). Lastly, we examine the opportunities and challenges of using libraries to advance population health.

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Table 1 Social determinants of health inequality

Original framework by Marmot and Wilkinson (the solid facts)	Adapted framework as applied to libraries
Transport	Health care access
Addiction	Addiction
Stress	Stress
Food	Food
Early life	Early life
The social gradient	The social gradient
Social exclusion	Social exclusion
Work	Work and employment
Unemployment	Disaster response
Social support	Social support

Theoretical Framework

This review relies on three conceptual frameworks to highlight how institutions can shape population health. First, the social determinants of health framework [33, 34] examines how upstream factors such as unemployment and social exclusion create health inequalities. We adapted this framework to identify how libraries can promote population health (see Table 1). Second, we draw on previous work that examined how 'meso-level' factors shape health [35]. Meso-level factors operate between the individual- and structural-level, have an empirically described or conceptually plausible relationship to health, and are potentially modifiable through collective action [35]. The meso-level is relevant because it calls attention to libraries as a modifiable community-level resource that could promote health. Third, this review is grounded in work on place-based health disparities [36]. Because libraries are distributed across myriad jurisdictions (e.g., rural, urban, rich, and poor), they offer an existing structure through which targeted investments in high-disparity areas could be part of a multi-sectoral strategy to promote health and mitigate disparities.

Methods

This is a scoping study [37], an approach frequently used for areas of research that are new or only poorly delineated in existing literature. The goal of this scoping study was not to conduct a systematic review of the health-related services that public libraries provide or to evaluate the impact of libraries in comparison to other community-level institutions that aim to ameliorate place-based disparities: insufficient research exists to accomplish that.

Rather, the goal of this paper is two-fold. First, the goal is to provide an overview of the nature and range of services and programs that libraries provide and second, to trace out a largely unrecognized connection between libraries and health. In doing so, we hope to stimulate further research, including impact evaluations. This scoping study followed a two-step process. First, we explored key social determinants of health based on Marmot's theoretical framework [33, 34] and identified ten relevant factors (see Table 1). We then tailored Marmot's theoretical framework to public libraries in the U.S. Specifically, one social determinant identified in Marmot's framework was removed (transport), while two additional determinants of health were added (access to healthcare and disaster response). We also condensed work and employment into a single category.

We then searched PubMed, Web of Science, Psychinfo, and Social Science Citation Index for peer-reviewed research on the contributions that public libraries make to each of the ten domains, using keywords in various combinations (library/libraries, program, intervention, health, wellness, literacy, education, housing, social determinants, services, social inclusion). The authors first reviewed the titles, abstracts and then full manuscripts for relevance and included articles only if they described or evaluated library-based services in the US. Since a significant portion of libraries' on-going work that impacts health is not included in peer-reviewed literature, we also included a selection of sources from the grey literature, (e.g., stakeholder reports, online media, and libraries' own websites) to more fully capture the range of ongoing programmatic work.

Results

Healthcare Access

Libraries promote access to healthcare in at least three ways, including: provision of direct healthcare services, health information, and linkage to services. Libraries are increasingly used as a space to provide targeted public health promotion and even healthcare, often through partnerships between public libraries, universities, community organizations and local governments. For example, libraries in San Diego, California, partnered with a lesbian, gay, bisexual and transgender (LGBT) community organization, a local church, and the Pacific College of Oriental Medicine to disseminate HIV/AIDS-related information and provide free computer training to 2500 people including patients, community residents, and health professionals [38] Some libraries directly employ medical professionals to provide health services. For example, in 2011, the Pima County Public Library in Arizona partnered with the local public health

Table 2 How public libraries can mitigate place-based disparities in population health

Determinant of health	Description	Example
Healthcare access	Implement and host targeted interventions in partnership with universities, community organizations and government departments	Weight loss programs [9]
	Provision of health information about specific conditions or how to access care	Services that offer assistance with applying for health insurance [10]
	Direct provision of health care services	Providing influenza vaccines [11]
Addiction	Emergency response to opioid overdose	Staff trained to administer medications such as naloxone following opioid overdose [12]
	Harm reduction response to substance use	Provision of needle collection containers and bandages to drug users [13]
Stress	Services designed to reduce stress	Classes that teach coping strategies for dealing with stress [14]
		Stress reduction therapies such as yoga and Tai Chi [15]
Food	Educational services to promote healthy eating and food literacy	Nutrition workshops that teach the preparation of healthy food [16]
	Direct provision of food	Provision of free school meals for children during the summer holidays [17]
Early life	Services designed to promote wellbeing and learning among young children	Play-groups for children under 1 year of age and their caregivers [18]
		Reading programs for parents and young children [19]
The social gradient	Services that promote the acquisition of human capital, such as literacy, education and specific qualifications and credentials	Holiday reading programs to promote children's literacy [20]
		Programs that offer academic-related qualifications such as General Educational Development and English as a Second Language [21]
		Language and citizenship classes for immigrants [22]
Social exclusion	Services to reduce social isolation among vulnerable groups	Services that facilitate access to homeless shelters and other services among the homeless [23]
		Outreach efforts to bring library services to homeless populations through collaborations with homeless shelters [24]
		Provision of safe spaces for minorities and vulnerable groups such as LGBT youth [25]
		Play-groups that reduce social isolation by fostering relationships among new parents [18]
Work and unemployment	Services that provide training for specific occupations	Job-training programs including health aides and security guard training [26]
	Services to assist with job seeking	Resume preparation classes [27]
Disaster relief	Provide disaster relief services following tornadoes, floods and hurricanes	Following hurricanes, libraries have served as evacuation centers offering electricity and internet and providing a space for various disaster relief organizations to deliver their services [28]
	Provide space to meet and recover during periods of civil unrest	Following the civil unrest in Ferguson Missouri in 2015, the local Ferguson Municipal Public Library provided a space in which local residents could meet, respond and recover [29]
Social support	Services that facilitate access to existing social welfare and legal services	'Know your rights' that connect immigrants with legal specialists [30]
	Services that foster social support through cultural and civic events such as concerts, art shows and other projects	X-Bowling league for older adults to reduce social isolation [31]
	Services that promote civic participation	Voter registration centers [32]

department to employ a public health nurse who provided basic health services such as physical assessments, first aid, and influenza vaccines [11].

Studies show that patrons often use libraries to access health information [39], particularly in rural areas [40] and among communities that lack home Internet access [41]. With a proliferation of health information available via the internet, public library staff play an increasingly important roles as information navigators, with some libraries employing health-specific librarians and trained staff to provide authoritative health-related resources [15]. For example, public libraries in Delaware employed consumer health librarians to improve the quality of health information available to patrons [41]. Other libraries have assisted patrons with applying for health insurance plans such as the Affordable Care Act [10]. Health information is also provided for children. Libraries in Shreveport, Louisiana provided children from low-income families with a web portal, activities, books and story hour with themes such as general wellness, germ prevention, nutrition, and exercise [42].

Addiction

In response to the opioid crisis, public libraries across the U.S. have adopted a range of measures to reduce overdose, such as stocking naloxone, a medication that reverses the effects of an opioid overdose [12]. For example, in Humboldt County California, 13 library staff have been trained in administering naloxone, and public librarians in other urban centers will soon be trained [12]. Boston Public Libraries and several libraries in Hawaii provide on-site needle collection containers and bandages for drug users [13].

Stress

Library services specifically designed to relieve stress include physical activities such as yoga and Tai Chi, [15] meditation, [43] and even coloring sessions [44]. In St Louis, a health-information intervention program with Washington University developed patron-requested programs, which included a stress relief program based on meditation and laughter yoga [14].

Food

Public libraries host a variety of activities aimed at improving nutrition. This includes classes that teach young people how to prepare healthy food [45] and workshops to teach adults to prepare healthy meals on a budget [14]. The U.S. Department of Agriculture's summer food service program has coordinated with public libraries to facilitate the distribution of 179 million meals to nearly four million children nationwide over the summer months [17]. To make healthy food more available in 'food deserts,' low-income neighborhoods that lack major supermarkets, Baltimore's Health Department launched the Virtual Supermarket Project, whereby library patrons can order groceries online (and can also pay with food stamps) and then pick them up from their local library [46].

Early Life

Public libraries enhance children's reading skills, social skills, and literacy development, all of which can have life-long impact on health. Libraries provide readings groups, story-hours, singing groups, crafts, and playtime to help parents and caregivers read to, and play and bond with their young children [47]. Libraries can also connect parents and caregivers of young children with early-year services. For example, Maryland Public Libraries and the State's Department of Education used social marketing campaigns to promote library use among parents of young children [19].

The Social Gradient

Libraries can build human capital and facilitate economic mobility through the provision of educational services and child and adult literacy programs [48]. An estimated 95% of libraries in the U.S. offer summer reading programs to prevent the 'summer slide' in reading achievement [20].

Libraries also support human capital development by offering specific courses such as English as a Second Language (ESL), General Educational Development (GED), and citizenship classes. In Austin, Texas, for example, public libraries offer free English language and citizenship classes through the 'New Immigrant Program', which includes a digital 'Newcomers Guide' that provides information about job seeking, access to legal and social services, and starting a new business [22]. Citizenship classes cover topics such as laws, regulations and rights, provide test preparation for the U.S. citizenship exam, and offer free assistance with citizenship-related paperwork [22].

Social Exclusion

Libraries can address social exclusion among structurally vulnerable groups, from homeless individuals to new parents. In San Francisco, where approximately 15% of library patrons are homeless, the central library maintains a full-time psychiatric social worker and a staff of formerly homeless 'health and safety advocates' to provide homeless patrons with information about welfare services such as meals, shelter and legal aid [49]; over 150 formerly homeless patrons have been placed in permanent housing and 800 have benefited from other social services [49]. Because homeless people often lack transportation, Denver public

libraries have a Community Technology Center team that regularly visit the local day shelter to provide instruction about job interviewing techniques and technology skills and to give participants bus tokens, a tour of the main library, and library cards [50].

Libraries also mitigate social exclusion by serving as designated safe spaces for vulnerable groups, such as LGBT youth who might feel unsafe at home or on the streets [25]. They can also reduce social exclusion through offering programs to increase acceptance of the LGBT community such as drag queen story hour [51].

Work and Unemployment

An estimated 90% of public libraries provide services for job seekers, making them a crucial labor market access point [52]. One national survey found that 92% of libraries help people access online job databases and resources, 78% help them create resumes, and 76% assist with online job applications [53]. Services for job seekers vary from assistance identifying available positions to cultivating skills and obtaining qualifications. For example, the Dallas Public Library provides one-on-one assistance with job applications and resumes through its 'Homeless Engagement Initiative.' [54] Some libraries offer training programs for specific occupations. Libraries in New York City train home health aides and security guards and offer Occupational Safety and Health Administration (OSHA) construction certification [26].

Disaster Relief

Libraries play an important role in responding to natural disasters such as tornadoes, hurricanes and floods [55]. In a study of library services in twelve different communities impacted by tornadoes, post-crisis services included: responding to information inquiries, creating community contact centers, staffing shelters in library buildings, housing city command centers (i.e., police, fire, public works), distributing food and supplies, providing facilities to recharge electronics and communication devices, assisting with the completion of Federal Emergency Management Agency (FEMA), and assistance with insurance claims and other paperwork [55].

Libraries also serve as spaces to access and disseminate information and services during periods of civil unrest. For example, during the 2015 protests in Ferguson Missouri, when the majority of businesses and organizations were temporarily closed, the Ferguson Public Library remained open for local residents to meet, respond and recover from the civil unrest [29]. In addition, following the killing of a number of Black men by police in the U.S., a library in Minnesota hosted a series of lectures led by local Professors that focused on the historical roots of the Black Lives Matter movement [56].

Social Support

Libraries foster social support through programs that decrease social isolation. For example, New York City libraries offer an X-box bowling league for older adults and the 'Lifetime Arts' program, which operates across 13 states and 80 public libraries, provides writing, painting, choir, and dancing classes for older adults to decrease social isolation [31]. Libraries also promote social support by linking people to federal, state, and local government assistance. For example, the National Library of Medicine trains local librarians to help patrons navigate social services, welfare and public assistance, health, education, and employment resources [57].

Libraries can also foster social cohesion through promoting civic engagement. Libraries in the U.S. have long provided spaces for voter registration [58] and for communities to meet to address social justice issues [59]. The Institute of Museum and Library Services (IMLS) encourages libraries to promote civic engagement through their Grants to States program [60]. For example, in an IMLS-funded partnership between the Hartford public library, the University of Connecticut, local government and an organization that support migrants and refugees provided services to promote immigrant civic engagement, including a core group of volunteer immigrants to help newly arrived immigrants with tasks such as accessing community and legal services [60].

Discussion

Libraries as a Meso-Level Resource

This scoping review has mapped out the ways in which public libraries can advance population health through a range of services and programs that address ten critical social determinants of health. This review suggests that there are unrealized opportunities to mobilize libraries as meso-level resources that address social determinants of health and, in doing so, to ameliorate place-based disparities in population health. By conceptualizing libraries as meso-level resources, we seek to contribute to a growing body of work that enumerates specific, and potentially modifiable, institutions that can advance population health [61].

Next Steps

There are important next steps to mobilize libraries as partners in addressing place-based health disparities. First, as others have noted, [55] there is a need to systematically

evaluate the health-related impacts of specific library-based services. Of the library services described in this paper that pertain directly to health promotion, only one intervention—an asthma based education program in Ohio—provided health-related outcome data [62]. Thus, while libraries are actively addressing the social determinants of heath, there is little outcome or evaluation data in the peer-reviewed health literature. Given the crucial role of housing, education, and safety-net services as social determinants of health, this would include assessing the relative efficacy of libraries, in comparison to other community institutions or programs, as locations to promote employment, improve educational outcomes, and engage vulnerable individuals in social welfare services.

Evaluation could be improved both through strengthening existing collaborations with public health researchers, who could assist with or conduct evaluations, and through the creation of evaluation tools that can be used by library staff. Specifically, research examining place-based disparities in library services and funding could help advance understandings of place-based health disparities as part of a broader analysis of community-level services and resources. This could entail developing indexes to measure various kinds of community-level resources such as library access, park equity and transport [63]. Collaborations between public health and libraries could also facilitate the expansion of health services within libraries. This could occur through embedding public health professionals within public libraries and also through training existing library staff to support the implementation of public health interventions, for example organizing outreach initiatives, facilitating discussion groups, or even, as is happening in San Francisco, training in naloxone administration to reverse opioid overdoses. In addition, collaborations between public libraries and federal, state and local government services should be strengthened to expand libraries' role in linking people to social welfare services.

Challenges

There are two primary challenges to libraries' potential to advance population health. First, libraries nationwide face funding cuts and limited hours [64]. President Trump has proposed eliminating the Institute of Museum and Library Services in his FY2019 budget, a move that past ALA President deemed 'counterproductive and short-sighted' because it would undermine job seeker services, summer reading programs, resume writing and job skills workshops [65]. Second, libraries' capacity to advance population health is challenged by issues of equity. Both local and nationwide studies have found that libraries in neighborhoods where residents are poorer and less educated than the national average are more likely to have smaller collections, shorter hours

or to be closed [66, 67]. Similarly, libraries in rural areas have smaller collections, less funding and smaller workforces than those in urban areas [68]. Thus, ensuring equality in access to high quality libraries should be an additional objective for public health. This will entail increasing public funding for libraries, particularly in states and counties suffering from particularly acute health disparities.

Conclusion

Libraries' extensive population reach, their access to diverse sectors of the U.S. population, the public trust they command, and their diverse geographic coverage favorably position them as part of a multi-sectoral strategy to advance population health. There are unrealized opportunities for public health researchers, healthcare workers, and policy makers to leverage this potential as part of a coordinated effort to mitigate place-based health disparities.

References

1. Morgan, A. U., Dupuis, R., D'Alonzo, B., Johnson, A., Graves, A., Brooks, K. L., McClintock, A., Klusaritz, H., Bogner, H., Long, J. A., Grande, D., & Cannuscio, C. C. (2016). Beyond books: Public libraries as partners for population health. *Health Affairs (Millwood), 35*(11), 2030–2036.
2. Horrigan, J. B. (2016). Libraries [Internet]. Pew Research Center: Internet, Science & Tech. Retrieved August 7, 2017, from http://www.pewinternet.org/2016/09/09/libraries-2016/.
3. Horrigan, J. B. (2015). Libraries at the Crossroads [Internet]. Pew Research Center: Internet, Science & Tech. Retrieved January 4, 2016, from http://www.pewinternet.org/2015/09/15/libraries-at-the-crossroads/.
4. Hero, J. O., Zaslavsky, A. M., & Blendon, R. J. (2017). The United States leads other nations in differences by income: Perceptions of health and health care. *Health Affairs (Millwood), 36*(6), 1032–1040.
5. Dwyer-Lindgren, L., Bertozzi-Villa, A., Stubbs, R. W., Morozoff, C., Mackenbach, J. P., van Lenthe, F. J., Mokdad, A. H., & Murray, C. J. L. (2017). Inequalities in life expectancy among US counties, 1980 to 2014: Temporal trends and key drivers. *JAMA Internal Medicine, 177*(7), 1003–1011.
6. Robert Wood Johnson Foundation. (2015) Birth place and life expectancy: A look at American cities [Internet]. Retrieved August 17, 2016, from http://www.rwjf.org/en/library/articles-and-news/2015/09/city-maps.html.
7. The World Bank. (2014). Life expectancy at birth, total (years)|Data [Internet]. Retrieved August 17, 2016, from http://data.worldbank.org/indicator/SP.DYN.LE00.IN?order=wbapi_data_value_2012+wbapi_data_value&sort=asc.
8. New L.A. city guidelines take aim at sharp health disparities [Internet]. Retrieved January 24, 2018, from http://www.latimes.com/local/lanow/la-me-ln-health-plan-20150330-story.html.

9. Flaherty, M. G., & Miller, D. (2016). Rural public libraries as community change agents: Opportunities for health promotion. *Journal of Education for Library and Information Science, 57*(2), 143.

10. Collins, L. N. (2015). Healthy libraries develop healthy communities: Public libraries and their tremendous efforts to support the Affordable Care Act. *Journal of Consumer Health on the Internet, 19*(1), 68–76.

11. Malkin, K. B., & Feingold, S. K. (2014). A library, a nurse, and good health. *CIN: Computers, Informatics, Nursing, 32*(12), 559–561.

12. American Libraries. (2017). Saving lives in the stacks [Internet]. American Libraries Magazine. Retrieved October 18, 2017, from https://americanlibrariesmagazine.org/2017/06/21/saving-lives -in-the-stacks/.

13. Civil Beat. (2017). Libraries struggle with a new role: Social services center [Internet]. Honolulu Civil Beat. Retrieved August 7, 2017, from http://www.civilbeat.org/2017/02/libraries-struggle- with-a-new-role-social-services-center/.

14. Engeszer, R. J., Olmstadt, W., Daley, J., Norfolk, M., Krekeler, K., Rogers, M., Colditz, G., Anwuri, V. V., Morris, S., Voorhees, M., McDonald, B., Bernstein, J., Schoening, P., & Williams, L. (2016). Evolution of an academic: Public library partnership. *Journal of the Medical Library Association, 104*(1), 62–66.

15. Flaherty, M. The public library as health information resource? Sch Inf Stud-Diss [Internet]. Retrieved May 1, 2013, from http:// surface.syr.edu/it_etd/82.

16. Freedman, M. R., & Nickell, A. (2010). Impact of after-school nutrition workshops in a public library setting. *Journal of Nutrition Education and Behavior, 42*(3), 192–196.

17. Louis, C. (2017) Free lunch at the library: The New York Times [Internet]. Retrieved August 7, 2017, from https://www.nytim es.com/2017/07/30/well/family/free-lunch-at-the-library.html.

18. Princeton Public Library. (2017) Baby playgroup [Internet]. Princeton Public Library. Retrieved August 24, 2017, from https:// www.princetonlibrary.org/event/baby-playgroup-26/2017-10-10/.

19. Shauck, S. M. (2002). Maryland public libraries: It's never too early. *Journal of Youth Services in Libraries, 15*(2), 9–14.

20. American Library Association (ALA). (2015) LibGuides: Summer reading programs: Research [Internet]. Retrieved August 10, 2017, from http://libguides.ala.org/summer-reading/research.

21. American Library Association (ALA). (2013) The American dream literacy initiative [Internet]. Advocacy, Legislation & Issues. Retrieved August 24, 2017, from http://www.ala.org/advoc acy/literacy/americandream.

22. Edwards, J. B., Robinson, M. S., & Unger, K. R. (2013). *Transforming libraries, building communities: The community-centered library*. Lanham, MD: Scarecrow Press.

23. Ayers, S. (2006). The poor and homeless: An opportunity for libraries to serve. *The Southeast Librarian, 54*(1), 13.

24. Collins, L. N., Howard, F., & Miraflor, A. (2009). Addressing the needs of the homeless: A San Jose library partnership approach. *The Reference Librarian, 50*(1), 109–116.

25. Winkelstein, J. A. (2013). Safe in the stacks: Community spaces for homeless LGBTQ youth [Internet]. Round Tables. Retrieved August 7, 2017, from http://www.ala.org/rt/glbtrt/tools/homeless- lgbtq-youth.

26. Queens Library. (2017). Job skills training programs [Internet]. Retrieved January 2, 2018, from http://connect.queenslibrary. org/1504?utm_source=oracle&utm_medium=email&utm_campa ign=jobskillstrainingpromo_septoct17.

27. Dallas Library. (2017) How can the library help with finding a job, resume writing, GED and other job-related training?|Booked Solid [Internet]. Retrieved January 2, 2018, from http://dallaslibrary2. org/blogs/bookedSolid/2016/07/how-can-the-library-help-with- finding-a-job-resume-writing-ged-and-other-job-related-training/.

28. Featherstone, R. M. (2012). The disaster information specialist: An emerging role for health librarians. *Journal of Library Administration, 52*(8), 731–753.

29. Chiochios, M. (2016). Carolina digital repository: The tweets heard around the world: Ferguson Municipal Public Library's twitter use around the 2014 civil unrest and its role in supporting community disaster resilience [Internet]. Retrieved August 17, 2016, from https://cdr.lib.unc.edu/record/uuid:0560faad- 37c2-4de0-aa6f-d9593f68c042.

30. Metro West Daily News. (2017) Immigrants' "Know Your Rights" forum held in Roslindale: News—MetroWest Daily News, Framingham, MA [Internet]. Retrieved August 9, 2017, from http://www.metrowestdailynews.com/news/20170312/ immigrants-know-your-rights-forum-held-in-roslindale.

31. NPR. (2017). Xbox bowling for seniors? Visit your local library [Internet]. NPR.org. Retrieved August 7, 2017, from http:// www.npr.org/2017/07/04/534431175/xbox-bowling-for-senio rs-visit-your-local-library.

32. Jaeger, P. T., Gorham, U., Sarin, L. C., & Bertot, J. C. (2013). Libraries, policy, and politics in a democracy: Four historical epochs. *The Library Quarterly, 83*(2), 166–181.

33. Marmot, M. (2005). Social determinants of health inequalities. *The Lancet, 365*(9464), 1099–1104.

34. Wilkinson, R. G., & Marmot, M. (2003) *Social determinants of health: The solid facts*. Geneva: World Health Organization.

35. Hirsch, J. S. (2014). Labor migration, externalities and ethics: Theorizing the meso-level determinants of HIV vulnerability. *Social Science & Medicine, 100*, 38–45.

36. Hewitt, A. M. (2013) *Addressing health disparities: Understanding place in the role of social determinant interventions. Soc determinants health disparities link health health care*. Bingley: Emerald Group Publishing Limited.

37. Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology, 8*(1), 19–32.

38. Broering, N. C., Chauncey, G. A., & Miller, J. (2012). HIV/ AIDS health information outreach service in San Diego. *Journal of Consumer Health on the Internet, 16*(1), 1–17.

39. Linnan, L. A., Wildemuth, B. M., Gollop, C., Hull, P., Silbajoris, C., & Monnig, R. (2004). Public librarians as a resource for promoting health: results from the Health for Everyone in Libraries Project (HELP) librarian survey. *Health Promotion Practice, 5*(2), 182–190.

40. Flaherty, M. G., & Roberts, L. (2009). Rural outreach training efforts to clinicians and public library staff: NLM resource promotion. *Journal of Consumer Health on the Internet, 13*(1), 14–30.

41. LaValley, S. (2009). Delaware health source: Consumer health libraries and health literacy outreach. *Journal of Consumer Health on the Internet, 13*(2), 180–186.

42. Woodson, D. E., Timm, D. F., & Jones, D. (2011). Teaching kids about healthy lifestyles through stories and games: Partnering with public libraries to reach local children. *Journal of Hospital Librarianship, 11*(1), 59–69.

43. Chicago Public Library. (2017). Meditation and stress relief for families [Internet]. BiblioEvents. Retrieved August 24, 2017, from https://chipublib.bibliocommons.com/events/585aa2580dbcda8 c026c4305.

44. Brooklyn Public Library. (2017) Adult stress relief coloring [Internet]. Retrieved August 24, 2017, from https://www.bklyn library.org/calendar/adult-stress-relief-cortelyou-library-071417.

45. Concannon, M., Rafferty, E., & Swanson, C. (2011). Snacks in the stacks: Teaching youth nutrition in a public library. *Journal of Extension, 49*(5), n5.

46. Donna Marie Owens. (2010) Check it out: Get your groceries at the library [Internet]. NPR.org. Retrieved October 18, 2017, from

http://www.npr.org/templates/story/story.php?storyId=126282239.

47. Aram, D., & Biron, S. (2004). Joint storybook reading and joint writing interventions among low SES preschoolers: Differential contributions to early literacy. *Early Childhood Research Quarterly, 19*(4), 588–610.

48. Viswanath, K., & Ackerson, L. K. (2011). Race, ethnicity, language, social class, and health communication inequalities: A nationally-representative cross-sectional study. *PLoS ONE, 6*(1), e14550.

49. PBS. (2015) Library social worker helps homeless seeking quiet refuge|PBS NewsHour [Internet]. Retrieved August, 2017 7, from http://www.pbs.org/newshour/bb/library-social-worker-helps-homeless-seeking-quiet-refuge/.

50. American Library Association (ALA). (2012). Extending our reach: Reducing homelessness through library engagement [Internet]. About ALA. Retrieved August 7, 2017, from http://www.ala.org/aboutala/offices/extending-our-reach-reducing-homelessness-through-library-engagement.

51. Meltzer, M. (2016). Kids attend drag queen story hour|The New Yorker [Internet]. Retrieved August 7, 2017, from http://www.newyorker.com/magazine/2016/11/21/kids-attend-drag-queen-story-hour.

52. Becker, S., Crandall, M. D., Fisher, K. E., Kinney, B., Landry, C., & Rocha, A. (2010). Opportunity for all: How the American Public Benefits from Internet Access at U.S. Libraries [Internet]. Institute of Museum and Library Services. Retrieved August 10, 2017, from https://eric.ed.gov/?id=ED510740.

53. Information Policy & Access Center (iPAC). (2012). 2011–2012 Public Library Funding & Technology Access Survey: Survey Findings & Report [Internet]. Information Policy & Access Center, University of Maryland College Park. Retrieved from http://ipac.umd.edu/sites/default/files/publications/2012_plftas.pdf.

54. Dallas Library|Dallas Public Library: Homeless Engagement Initiative [Internet]. Retrieved August 7, 2017, from http://dallaslibrary2.org/homeless/.

55. Bishop, B. W., & Veil, S. R. (2013). Public libraries as post-crisis information hubs. *Public Library Quarterly, 32*(1), 33–45.

56. Minnesota Spokesman-Recorder (MSR). (2016). Lecture series to study Black Lives Matter in historical context [Internet]. MSR News Online. Retrieved June 20, 2016, from http://spokesman-recorder.com/event/lecture-series-to-study-black-lives-matter-in-historical-context/.

57. Cabello, M. & Butler, S. M. (2017). How public libraries help build healthy communities [Internet]. Brookings. Retrieved August 7, 2017, from https://www.brookings.edu/blog/up-front/2017/03/30/how-public-libraries-help-build-healthy-communities/.

58. Jaeger, P. T., Gorham, U., Sarin, L. C., & Bertot, J. C. (2013). Libraries, policy, and politics in a democracy: Four historical epochs. The Library [Internet].

59. Weeks, L. (2015). When America's librarians went to war [Internet]. NPR.org. Retrieved August 17, 2016, from http://www.npr.org/sections/npr-history-dept/2015/07/04/418840245/when-americas-librarians-went-to-war.

60. Hildreth, S. (2012). Inspiring libraries as community anchors. *National Civic Review, 101*(4), 44–47.

61. Tsouros, A., & Green, G. (2010). *Healthy cities: Lessons learnt: Urban health global perspect* (pp. 405–419). San Francisco: Wiley.

62. Johnson, C. E., Johnson, T., Clark, H., Schirwian, K., & Thomas, O. (2006). A library-site asthma education program for inner-city communities. *Journal of Asthma, 43*(1), 9–18.

63. Our Methods|Ranking System [Internet]. County Health Rankings & Roadmaps. Retrieved January 24, 2018, from http://www.countyhealthrankings.org/explore-health-rankings/our-methods/ranking-system.

64. Verde, T. (2017). Library Services and Programs Imperiled in Connecticut [Internet]. Retrieved August 13, 2017, from http://wnpr.org/post/library-services-and-programs-imperiled-connecticut.

65. American Library Association (ALA). (2017) President's budget proposal to eliminate federal library funding "counterproductive and short-sighted" [Internet]. News and Press Center. Retrieved August 25, 2017, from http://www.ala.org/news/press-releases/2017/03/president-s-budget-proposal-eliminate-federal-library-funding.

66. Neuman, S. B., & Celano, D. (2001). Access to print in low-income and middle-income communities: An ecological study of four neighborhoods. *Reading Research Quarterly, 36*(1), 8.

67. Koontz, C. M., Jue, D. K., & Lance, K. C. (2005). Neighborhood-based in-library use performance measures for public libraries: A nationwide study of majority–minority and majority white/low income markets using personal digital data collectors. *Library & Information Science Research, 27*(1), 28–50.

68. Real, B., Bertot, J. C., & Jaeger, P. T. (2014). Rural public libraries and digital inclusion: Issues and challenges. *Information Technology and Libraries, 33*(1), 6.