

Evaluating HIV Educational Materials for Older People

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Abstract

Objective: To address the gap in knowledge about HIV risk reduction materials that target older adults. This review offered a comprehensive and rigorous examination of HIV risk reduction education materials that targeted older adults in the United States, assessing the gap in their coverage and content. **Method:** A cross-sectional review of both print and Internet sources from state departments of public health, state and area agencies on aging, and web resources that targeted older populations was performed. **Results:** Of 29 health departments and 13 state and area agencies on aging that responded to the request, there were 9 HIV education materials identified that targeted older people. Of those materials, only 2 addressed the majority of aging-specific recommendations made from a previous study that described important HIV risk reduction information. **Discussion:** Recommendations are made about dissemination ideas to increase awareness and utilization of HIV educational materials.

Keywords

HIV, prevention education, print materials, risk reduction

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What Do We Already Know About This Topic?

HIV prevention efforts have not intentionally targeted an older audience.

How Does Your Research Contribute to the Field?

As a follow-up study to a previous inquiry made fifteen years ago, this research provides a comprehensive examination of HIV risk reduction materials and identifies those that target older audiences.

What Are Your Research's Implications Toward Theory, Practice, or Policy?

Printed and electronic educational materials are a common and inexpensive way to distribute health information, therefore the implications from this research can increase awareness about existing HIV risk reduction materials created for older adults specifically.

Introduction

HIV continues to be a major public health crisis for older people. Globally, persons living with HIV are aging. Prevalence data for older individuals have not generally been captured by many countries, providing limited data about the trends of this growing age cohort.¹ Older adults remain at risk for HIV acquisition, and human service professionals continue to underrecognize risk behaviors and symptoms, which cause

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delays in treatment.² Targeting this group with tailored, aging-specific educational materials can increase awareness and reduce stigma associated with HIV.³

The initial investigation of HIV prevention materials for older adults assessed the availability of printed HIV/AIDS education materials that focused on older adults from each of the 50 state public health departments.⁴ As a low-cost and simple intervention, printed educational materials (PEMs) have been widely used to disseminate information and clinical evidence and are distributed by public health departments.^{5,6} The authors' review found that of all 50 states, only 14 had materials that targeted older adults.

The aim of the current study was to expand upon the work of Orel and colleagues in 3 important ways. The first aim was to provide an updated review of targeted HIV materials for older adults available at public health departments, since the original study happened over a decade ago. The second aim was to expand the scope of the review by including both state and area agencies on aging (AAA) and aging websites in the query for targeted materials. State and area agencies on aging are responsible for developing and administering programs and plans that assist older adults in those states.⁷ Area agencies on aging (a general term used in the United States) consist of public or private nonprofit agencies that are responsible for providing the same service based on geographic area, on a regional or local level.⁸ They also coordinate specific services such as in-home services and home delivered meals, whereas state area agencies provide the administrative oversight and coordination to the local agencies. The final aim was to develop a mechanism that could assess educational materials and their relevance to older people. Using the initial investigation from 2004 and a comprehensive review of HIV/AIDS strategies that were specific to aging,⁹ a scorecard was developed and used to evaluate the materials. The current study's authors created 4 categories of recommendations to follow when developing and evaluating HIV PEM for older adults and used those to rate the current educational materials. Those recommendations included raising older adults' perceived sense of susceptibility to HIV/AIDS, providing HIV/AIDS information, incorporating specific HIV/AIDS risk reduction strategies, and emphasizing early intervention.⁹

Background

Nearly 10% of people living with HIV worldwide are aged 50 years and older.¹⁰ In the United States, HIV incidence has decreased during the past 4 decades; however, HIV incidence among older adults has increased in the past 20 years.¹¹⁻¹³ In 2016, it was estimated that 1 in 6 HIV diagnoses in the United States were among persons aged 50 years and older.¹⁴ HIV educational materials should be a viable resource to older adults because of the diverse pathways of HIV acquisition, whether they have aged with HIV or are aging and acquired it later in life.¹³ Older adults have the same risk factors for HIV infection as younger adults.¹⁵ For example, sexual contact is the primary mode of transmission of HIV among older adults.¹⁶

Older adults are also less aware of these risks. They have less knowledge about transmission risks, remain sexually active and do not use protective barriers, and also abuse substances and alcohol. Late HIV screenings, failure of health-care providers to consider older adults as susceptible to HIV infection, ignoring or confusing symptoms of HIV for diseases associated with aging (eg, dementia), and discomfort with conversations around sexual activity and sexual orientation are barriers that are encountered by the medical community.^{16,17} Additionally, ageism and stigma have impeded reach and communication when it comes to HIV prevention for this group, including feelings of judgment for sexual preferences, being sexually active, lack of care due to their age, and lack of awareness and knowledge among physicians.^{16,18-23} Being inclusive of older adults in sexual health research can help to combat against discrimination and increase the effectiveness of primary prevention.

The Centers for Disease Control and Prevention (CDC) recommends routine HIV screening for persons between the ages of 13 and 64 during annual routine health checks as an approach to early detection and prevention. Additionally, those who participate in high-risk behaviors such as unprotected sex with a partner of unknown status or injection drug use should be tested yearly.²⁴ Due to the exclusion of older adults from HIV primary prevention efforts, they have been an underserved and undertargeted population. Currently, older adults have become the focus of HIV-related federal funding, initiatives, and research. However, most of these initiatives focus on biomedical research, with little covering behavioral issues.

The National Institutes of Health (NIH) provides access to reports and data from NIH activities through the Research Portfolio Online Reporting Tools.²⁵ In reviewing active studies using this tool, using the search terms "HIV prevention AND older adults," it was found that 42 research studies focused on an element of HIV prevention and/or a theme related to being older/being an older adult. Twenty-one of the studies did not reflect target populations that included older people; the results were highly mixed due to the search terms and the varying context of the term "older" being used. In other words, *older* was not used to reflect persons aged 50 years and older, rather it was used to describe age groups in comparison to others. Of the remaining 21 studies that included persons aged 50 years and older, they specifically focused on biomedical aspects of being older *and* living with HIV (ie, multimorbidity, polypharmacy, and health-care costs; impact of HIV-1 and aging on mucosal vaccine responses; psychosocial predictors of successful aging; engagement in care in rural older adults who are living with HIV; response to pneumococcal vaccine; exercise intervention to manage obesity). Of the 5 studies that were behavioral, 2 were mental health interventions to improve antiretroviral therapy adherence, one focused on HIV testing behavior and another focused on a home-based exercise program using motivational counseling. The only behavioral project that focused on *reducing* HIV risk behaviors among older adults was an R01 randomized clinical trial, set out to test the efficacy of a

behavioral intervention to reduce condom-less sex in persons who are living with HIV and are at age 50 years and older.

Another important resource is the CDC Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention. It provides a complete listing of risk reduction evidence-based behavioral interventions. Of the 65 listed, none focused on people aged 50 years and older.²⁶ A search in PubMed revealed only one study that examined an HIV educational booklet and its use for HIV prevention among older adults in Brazil. This review focused on the manufacturing of a single booklet and validating the content with a panel of judges.²⁷ The focus was on both the presentation of the material (eg, language, illustrations, design) and content validation (eg, did it address gaps and myths). This single study support the aims of this study, in that there is a dire need to include interventions that focus on HIV risk reduction strategies for older adults, moving from a biomedical focus to a behavioral focus.^{28,29,30}

Methods

Identification of PEMs

Ethical approval and informed consent. This evaluative project did not involve human subjects; therefore, no institutional review board was required.

Contact information was collected from spring of 2015 to summer of 2016. Points of contact were state departments of public health, departments/offices on aging, and AAA in each of the 50 states, the District of Columbia, Puerto Rico, and US territories. State departments of public health were identified using state health websites. Two attempts were made during the initial contact; individual e-mail was the primary mode of communication, and a letter was sent to each contact requesting the materials. Some electronic inquiries were made to general inquiry boxes located on the websites where there was no e-mail contact. When e-mails were returned as undeliverable, hard copies were physically sent to agencies that did not have a working e-mail contact or alternative. There was also an expectation by including District of Columbia, Puerto Rico, and the US territories that risk reduction materials would be present at these additional sites, because HIV surveillance has occurred since 2008 in all states including District of Columbia and the 6 US dependent areas, using fully implemented name-based HIV infection reporting.³¹ Of all state public health departments, the District of Columbia, Puerto Rico, and 5 territories (n = 57), half of those responded to the first request (n = 29).

Three request letters were drafted with a prepared script, similar to the Orel et al's⁴ procedures for data collection. The first letter was a request for copies of any HIV/AIDS education material distributed from state departments of public health. The purpose of that contact was to establish a connection with the organization. These letters went out via e-mail first, with a follow-up letter via postal mail in the spring of 2015, creating 2 attempts to establish communication. Many public health departments had general inquiry boxes where the script was

copied and pasted in as well. In the summer of 2016, 2 versions of the second request letter were prepared to request aging-specific materials, one for those who responded to the first request and one for those who did not. This created a third attempt to establish contact with agencies who had yet to respond as well as follow-up for those who had. A third letter was prepared specifically for the state agencies on aging and AAA requesting only aging-specific materials. The second and third letters were primarily sent via e-mail, and a few were sent via postal mail. Altogether, there were several separate attempts to connect with agencies through postal mail and electronic mail.

Contact information for state area agencies on aging and AAA was identified utilizing Eldercare Locator, an online service of the Administration on Aging that provides information to connect older adults with information on senior services. By including the agencies on aging, the hope was to accumulate more contacts that serve older adults and to assess whether they were disseminating targeted materials. It should be recognized that in smaller states, the state area agencies also serve as the AAA (eg, Utah), and in those instances, the state agency was contacted, providing nearly 100 additional contacts. Agency names and contact people, addresses, phone numbers, e-mail addresses, and URL addresses were maintained in an Excel sheet.

In order to fully explore other PEMs that exist and are in use, government websites, professional organizations, and association websites specific to aging, healthy aging, aging research, or aging with HIV (n = 17) with top-level domains, such as .org (nonprofit organization), .edu (educational institutions in the United States), .gov (US government entities) were identified and reviewed. These entities were selected because their domains imply that the sources are believed to be credible, include author or sponsorship, and are likely to be current. Another Excel sheet was created that included the websites with the URL address, title/operating component, and principal agency/organization type.

Over the course of the year of this project, the first author received PEM electronically as well as via postal mail. The PEMs included brochures, posters, pocket cards, state-specific tracking forms, web links, and magazines.

Each of the authors had previous HIV research experience, specific to risk reduction strategies, and/or working with older adults. The first author served as project manager, point of contact for agencies and health departments, and data manager; all of which includes data collection, data entry, and creating the scorecard. The second author served as the reviewer of the scorecard against the identified recommendations,⁹ to ensure that all the categories were captured and quantified correctly. The first and second authors used the scorecard to perform the quality review of the PEM. The role of the other authors was to check the ratings from the first and second authors for consistency and to note any large differences in the ratings, in addition to peer debriefing about the results of the review.

Development of Review Criteria

While waiting for responses, a scorecard was created (see Supplementary material). This scorecard was developed to be used with materials received after the request for aging-specific materials since this review focused on evaluating materials that targeted older adults. The scorecard captured all 4 recommendations and message organization. The first and second authors reviewed the scorecard template for message organization, which included the 4 recommendations based on previous empirical observations, content and visual appropriateness, readability, and distribution. To examine message organization, balance and accuracy criteria were applied. Balance criteria rated the presence of the 4 recommendations, content presentation, and visual appropriateness. Accuracy criteria were developed based on defined HIV risk reduction strategies by the CDC and related HIV literature. The 4 recommendations for targeting risk reduction messages for older adults, based on Orel et al,⁹ were to (1) raise older adult's perceived sense of susceptibility to HIV/AIDS, (2) provide appropriate HIV/AIDS factual information, (3) incorporate specific HIV/AIDS risk reduction strategies, and (4) emphasize early intervention. In addition to those content areas, Orel et al⁹ also suggested that (5) content presentation and (6) visual appropriateness be considered to account for the presentation of information and to accommodate visual changes that occur with age. Lastly, to account for comprehension and access, (7) readability and (8) the distribution method were included in the scorecard.³² Each of the 8 content areas received a score or was tallied.

The first and second authors independently reviewed each aging-specific PEM received. Scores for recommendation 1 could range from 0 to 35, recommendation 2 from 0 to 50, recommendation 3 from 0 to 35, and recommendation 4 from 0 to 40. The 4 recommendation areas were scored across specific items from 0 to 5; higher scores indicated more presence of the items, lower indicated absence. Scores for both content presentation and visual appropriateness ranged from 6 to 18. They were scored 1 to 3 for each item in the areas; higher scores indicated more presence of the items, and lower scores indicating absence. The recommendation scores were designed to reflect Likert scale scoring to have a wider range among the categories for the raters to rate from, whereas the latter had a smaller range, as content presentation and visual appropriateness were less diverse.

MedlinePlus, the NIH website for consumers, provides several readability assessment testing tools to determine reading level for purposes of evaluation and improvement.³³ It was decided that readability would be scored using the Flesch Reading Ease score and the Flesch-Kincaid grade-level score. The higher the reading score, the easier it is to understand the material, with a score between 60 and 70 desired. The grade-level score indicates at what grade level material can be understood. The first author used both Microsoft Word and an online tool³⁴ to assess select passages from the PEM for readability.

Table 1. State Departments of Public Health Aging-Specific Materials.

State	Format	Publication	Year (Edition/ Revised)	Publisher
Idaho	Brochure	^a	No date	ONE
Kentucky	Pamphlet	^b	2011	Channing Bete
	Pamphlet	^c	2010	Merck
Maryland	Pamphlet	^d	2012	Channing Bete
New York	Booklets and posters	^e	No date	State-specific

^aTitle: "Seniors and Sex."

^bTitle: "Older Adults and HIV."

^cTitle: "10 Tips For Living Well with HIV Over 50."

^dTitle: "What People Over 50 Need to Know About HIV and AIDS."

^eTitle: "Been There, Done That: Sex Never Gets Old"; "Older. Wiser. Responsible. Age Won't Protect You from AIDS"; "Older. Wiser. Responsible. HIV and Older Adults: Staying Healthy with HIV"; "Sex Never Gets Old: Age Doesn't Protect You From AIDS/HIV/STDs."

Table 2. State and Area Agencies on Aging-Specific Materials.

State	Format	Publication	Year (Edition/ Revised)	Publisher
Colorado	Web link	^a	2016	Diverse Elders Coalition
Connecticut	Pamphlet	^b	2015	Channing Bete
	Pamphlet	^c	2008	Bete
Georgia	Brochure	^d	2009	ETR
	Brochure	^e	2009- reviewed in 2012	Journeyworks Publishing
Nebraska	Brochure	^d	2014	ETR
	Brochure	^f	2008	ZOR, Inc
Puerto Rico	Pamphlet	^b	2014	Channing Bete (in Spanish)

^aTitle: "What to Know." Retrieved from <http://www.diverseelders.org/what-to-know/hiv-aging/>.

^bTitle: "What people over 50 need to know about HIV and AIDS."

^cTitle: "Older Adults and HIV."

^dTitle: "HIV & STD Prevention After 50."

^eTitle: "What Older Adults Need to Know About HIV and Other STIs."

^fTitle: "I Never Asked I Wish I Did."

Results

Between the state departments of public health and agencies on aging, of the 8 states that responded, they reported that they utilized material printed by 2 companies that provide educational materials, Education Training Research Associates (ETR)³⁵ and Channing Bete Company, in addition to the CDC. Education Training Research Associates is a behavioral non-profit company that provides a range of sexual and reproductive health products for educational purposes. Channing Bete is a leading publisher of educational and outreach tools. Among the states that responded, 9 states reported that they had state-specific materials. Tables 1 and 2 showcase materials used by both entities. In the 2004 study, it was found that a dozen of the

Table 3. Aging-Specific Websites.

National Council on Aging
National Institute on Aging
Administration on Aging
National Association of Area Agencies on Aging
CDC-Healthy Aging
The Retirement Research Foundation
American Federation for Aging Research
NIH Senior Health
The AIDS Institute
AgePage
National Association on HIV over Fifty ^a
National Resource Center on LGBT Aging
Services & Advocacy for Gay, Lesbian, Bisexual, & Transgender Elders
Alliance for Aging Research
United States Environmental Protection Agency
Terrance Higgins Trust
AIDS Action Committee of MA

^aWebsite currently down.

Table 4. Descriptive Statistics of the 7 PEM reviewed: Overall.

Scorecard Category	Range	Median
Recommendation 1: Raise older adult’s perceived sense of susceptibility to HIV/AIDS	3-28	15
Recommendation 2: Provide appropriate HIV/AIDS factual information	10-41	19.5
Recommendation 3: Incorporate specific HIV/AIDS risk reduction strategies	6-27	16
Recommendation 4: Emphasize early intervention	3-21	9.5
Content	4-19	12.5
Visual	6-26	16.5

participating state health departments used materials from either ETR or Channing Bete Company and 2 sites that had state-specific material.⁴ A conclusion is that both ETR and Channing Bete remain common resources that are used to disseminate targeted HIV education information for older audiences, with the CDC being an additional resource. In the current study, these materials included fact sheets on HIV infection, partner services, HIV drug assistance, testing, condom use, being HIV negative, living with HIV, coloring and activity books about HIV and AIDS, pregnancy and HIV, Ryan White Part B, HIV and Sexually Transmitted Diseases (STDs), alcohol and other drugs, people of faith, needles, disclosing, sex myths, and viral hepatitis and HIV. Several of these items were also available in Spanish. After visiting each aging-related website (Table 3) and using *HIV* and *HIV risk* as search terms, it was discovered that more than half (n = 10, 55%) had targeted materials posted.

Scorecard Results

The first and second authors independently reviewed each aging-specific PEM received. Scores for recommendation 1 could range from 0 to 35, recommendation 2 from 0 to 50,

recommendation 3 from 0 to 35, and recommendation 4 from 0 to 40. The 4 recommendation areas were scored from 0 to 5 for each item in the areas; higher scores indicated more presence of the items, lower indicated absence. Scores for both content presentation and visual appropriateness ranged from 6 to 18. They were scored 1 to 3 for each item in the areas; higher scores indicated more presence of the items, and lower scores indicating absence. The recommendation scores were designed to reflect Likert scale scoring to have a wider range among the categories for the raters to rate from, whereas the latter had a smaller range, as content presentation and visual appropriateness were less diverse. The average (median) of the sets of scores are seen in Table 4.

The first and second authors agreed that given the variation in scores, if scores were more than 6 points apart, it would be designated as not in agreement. For content presentation and visual appropriateness, if scores were more than 3 points apart, it would be designated as not in agreement. This decision was made based on the fact that the range for the recommendations ranged from 0 to 35 and 0 to 50, so a larger spread was acceptable, whereas with content and visual scores had a smaller range (6-18). Inter-rater reliability was calculated using percentage agreement for a 2-rater model. Given the small number of categories, minimal agreement was determined at 33% and high agreement at 50% or higher. The raters had minimal agreement on 3 publications, high agreement on 3 others, and 100% on 1 publication, which was produced by ETR.

Readability

Channing Bete Company, a provider of health education materials, listed on its website that the Flesch-Kincaid testing method is used for determining the reading levels of its publications. For adults aged 65 years and older, materials are written at a fifth- to sixth-grade level; however, this range is specific to the Learning for Life titles and not the ones included in this review.³⁶ Publications for teens, young adults, and adults were written at sixth- to seventh-grade level (booklets with illustrations and pamphlets) with a few at third-grade level and seventh- to eighth-grade level. It is unclear where the reviewed material fell, yet they were treated as sixth-grade level. ZOR, Inc also indicated that the reading level for its materials was below an eighth-grade reading level.

Table 3 lists and categorizes the format, title, year of publication, and publisher by state that was specific to an older audience. The most frequent publications from the state departments of public health were from Channing Bete Company, ETR, and the CDC. As an added result of this study, a scorecard was developed that can be used to assess educational materials that target older adults for HIV prevention messages.

In a previous study, it was found that in one state, staff in the AAA indicated that older adults living with HIV was a growing concern, acknowledged the importance of the problem, and wanted additional training on this population.² Although those views support the growing concern of being prepared to work

with this growing and hidden population, they were geographically limited to the one state, focused on secondary preventive efforts, and have yet to be replicated in other states. Findings from this project show that of the state agencies on aging and AAA that responded to the request ($n = 13$) for aging-specific HIV PEM, a little over one-third (39%, $n = 5$) indicated that they had targeted material, and the remaining 8 indicated that did not have aging-specific materials. Common responses from these agencies were that they did not have any HIV/AIDS education materials that targeted older adults, that they did not specifically do outreach that was age-specific among persons living with HIV in their area, that they targeted the older population for *other* conditions (ie, hepatitis C), and that they used general HIV materials with all populations, stating the use of ETR, Channing Bete Company and CDC printed materials. Also, they directed interested persons to the state department of public health or an AIDS Service Organizations for information. They also made suggestions as to where they located such information. The locations included web and other print resources from AgePage, Services and Advocacy for GLBT Elders, AIDS Education & Training Center Program, ZOR (health promotion materials that empower African Americans), National Coalition of STD Directors, social media handles such as @Prison_Health and @HIV_Insight, additional pamphlet order forms from less known companies (ie, www.jimmiehatz.com/CommonGround.pdf), ACRIA, Genentech, Journey works.com, hcvadvocate.org, American Social Health Association, Glaxo Wellcome, privateline.org, and Merck. One area agency on aging recommended an HIV webinar hosted by the National Council on Aging, Center for Healthy Aging titled, "Engaging HIV+ Older Adults in CDMSE," a positive self-management program. Overall, the agencies were very responsive and engaging in the data collection process and communicated with the first author promptly, forwarding and rerouting e-mails to the appropriate person(s) to ensure the request was addressed.

Discussion

While the number of PEM geared toward older adults was less in this review than in the initial review conducted in 2004, to be considered is the data collection procedures. Given the expansion and use of technology to electronically request materials, it seemed as though that would be an advantage in the current study. However, given the amount of traffic that websites can encounter, requests for information may flow to one individual and make receiving and/or fulfilling the requests challenging. This may be a reason for seeing fewer responses, hence a lower number of data points and not a true reflection that there are numerically fewer materials. A strength to using electronic requests is increasing the reach and establishing a list of contact persons per site, something that a postal mail trail may or may not do so well. It also enhances reproducibility as it creates a system of contacts (eg, returned e-mails, connections to other departments when the initial contact is not the appropriate contact) that can be used for similar purposes. It was also found

that both state departments of public health and agencies utilized some of the same PEM, in particular, those produced by ETR, Channing Bete Company, and the CDC. The state agencies also had a more diverse inventory of PEM than the health departments reported. Lastly, addition of the web resources identified over a dozen additional PEM that could be used for dissemination among older adults. Overall, the addition of the agencies and web resources in this review highlighted additional resources that target older adults for HIV risk reduction.

Several themes derived from the current study are congruent with the 2004 review, indicating a need for specific changes to educational materials for older adults. For example, the information messages in the reviewed materials had few bilingual publications (for Spanish-speaking audiences), lacked culturally sensitive messages, a brief HIV risk assessment, and case histories of older adults' life experiences. Review of visual appropriateness revealed both variations from the recommended font size of 20 and addressing generational differences in the comprehension of terms used. Additionally, while the CDC has the recommended age for screening up to 64, having a cutoff age perpetuates the ageist attitude that persons aged 65 years and older do not participate in risk behaviors and do not need screening. It is the thought of the authors that due to the low percentage of HIV incidence that falls into the 50 and up age-group, which is a possible reason for the intentional cutoff age for screening. Persons aged 50 to 54 years are the fastest growing group of HIV incidence. Additionally, the CDC recommends opt-out screening for geographic areas that have an HIV prevalence of less than 0.1% for persons aged 18 to 64 years. This suggests that either older adults are receiving medical care in areas that have a low prevalence of HIV or fail to receive routine opt-out HIV testing in high HIV prevalence areas.³⁷ A major finding from this study was that targeted education material was missing altogether even with the inclusion of state agencies on aging and AAA.

Limitations

This study has several limitations. There was substantial reliance on a key contact person to provide the information; therefore, some entities and agencies may not have had the full opportunity to participate compared to others. There was a considerable reliance on publicly available materials. Although the focus of this project was on HIV prevention, there were materials that included persons living with HIV (ie, treatment adherence, secondary prevention). There was also a heavy reliance on practitioner expertise during the rating of the materials. Given that there have not been prior studies that have evaluated this type of material for this population, this evaluation should be revisited and replicated. As aforementioned, several of the state agencies on aging also served as the AAA, thus affecting the response rate overall, from these agencies. Future examination should consider those states that operate this way.

Although this review was focused on rigor and evaluating the materials, the authors acknowledge that it is not comprehensive. The attempts to collect data were isolated; single

attempts were made to reach contacts. Multiple attempts within a short window could have provided better response rates and accuracy about the response rates. Multiple attempts would also provide information about each of the contacts which do or do not disseminate compared to single attempts. It is highly recommended that future studies attend to this shortcoming, so a clearer picture of the number of available HIV education materials is captured.

Another limitation was developing a tool to assess the materials. Because a scorecard did not exist, a major weight of this study was its conceptualization and development. A next step in refining the scorecard will be to review the targeting materials and employ a third coder to enhance the trustworthiness of the results. There is also a need to examine the use of the scorecard in other countries. Social programs in other countries that provide services to older adults, through community service organizations that may be similar to AAA in the United States, include social integrations programs and health clinics in other countries. When looking at global trends in aging and HIV prevalence, this type of study could serve as a resource to create or support programs such as these.

Although there was heavy reliance on print or web accessible materials, it is also possible that there are other forms of modern (social) media that provide information geared toward older adults that are used. In the advent of Facebook, Twitter, and YouTube, it is highly likely that older adults, especially from the Baby Boomer generation, are seeking guidance from these outlets as resources. As a known communication strategy, tailoring communication is more effective in changing behaviors and increasing knowledge (Agency for Healthcare Research Quality, 2012). Social media provides a platform for that kind of tailoring. It allows for interactive communication, in multiple formats, and increases the availability of content for consumers. Through social networks, information can be shared and made more credible and effective.³⁸ Social media has more “managers,” so the ability to keep information updated is a more seamless task compared to the website links presented earlier. While it remains unknown how social media is currently being used to promote targeted HIV education messages for older people, it is possible that is happening and should be explored globally. Electronic resources make the promise of routine administration and increased multiple sources of information. It requires consumers to be able to access, navigate, and comprehend material. The effect of presentation medium on comprehension should also be explored to reveal any potential deficits that are caused by the interface used to deliver the message.³⁹

Equally important is that readability was assessed using random passages for the materials via the 2 methods previously mentioned. Channing Bete and ZOR, Inc’s product information (readability) was publicly available and easy to locate, in comparison to the others reviewed. Future research would benefit from contacting publishers directly for this information if it is not publicly available. Another alternative is performing a reliability assessment on the available forms of readability tests to use for future reviews of this kind. This was not performed

extensively in this study, as the purpose was to establish the criteria to assess the materials and then consider what would be appropriate to use in that assessment. While select passages were assessed, this is important to include in future studies. Readability assessments are time-consuming and require attention to detail, and this should be a part of the planning process for future studies. In the aforementioned by Cordeiro et al,²⁷ readability was not assessed. Four criteria were established to address language and included comprehension as presented as a conversation, using short texts, using active voice and simple definitions, and being grammatically correct. This study illustrates that readability is a higher level analysis of language and should be included.

Finally, the authors acknowledge that knowledge alone is not sufficient for behavioral change, and by having printed materials that are accessible, this method of dissemination alone is not as effective of an intervention without additional implementation strategies.⁴⁰ In a review of experiments that utilized PEM to change the behavior of physicians, it was found that of those that used PEM in isolation compared to using them with implementation strategies or a nonintervention control, there was no significant difference in behavior.⁴¹ Freemantle et al⁴¹ and Thomson O’Brien et al⁴² also show positive results when combining dissemination strategies. A lesson learned from this medical literature is that a single intervention (printed materials only) is less effective than using a combination (pairing it with audit and feedback or outreach). In order to understand this limitation, future investigations could examine nonpublished studies or other documented observations. This can be done using contacts at state health departments, senior centers, AIDS service organizations, and HIV-related nongovernmental organizations and looking at their dissemination practices that are done in combination and have positive results.

Recommendations for Future Research

As an important component of health care and decision aids, PEMs remain an important part of the communications methodology used by public health departments⁴³ and the potential role of reducing HIV risk in older populations. This current review, which offered a comprehensive and rigorous evaluation of PEM, found that although a large volume of HIV prevention information exists, there are fewer HIV PEM for older adults currently than there were 10 years ago and that these materials lack key elements related to an aging and older population who participates in risk behaviors. Two publications addressed certain issues well for the older population. This review also found that there are common publications that are being used and that additional resources on aging-specific websites have educational resources that should be considered as well.

It is vital to update or create PEM and other dissemination materials that address HIV risk behaviors related specifically to older adults due to the expected growth of older adults in the United States.⁴⁴ As aforementioned, after over a decade, this

information is still missing when the target is older people. To relieve some of the burden that state departments of public health have to provide educational materials, all agencies that serve older adults should have access to PEMs that target this population. A contribution of this study is that a mechanism for dissemination has been established for agencies. With a database of contacts and a formal line of communication established, these findings will be shared with state departments of public health as well as state agencies on aging and AAA, a recommendation that the initial study suggested.⁴ The scorecard is tool that will be shared with these entities as an educational intervention. A follow-up will be to design a newsletter or infographic that illustrates the findings from this study as an intervention for increasing awareness about available resources to health departments and agencies alike.

Moving forward, stakeholders and constituents should have guidelines to support the creation and dissemination of such materials in the event that none are available or existing materials need to be modified to suit needs of their consumers. The creation of printed material review committees, consisting of older consumers living with and without HIV, health professional representatives, researchers, and other stakeholders, should be established if not by state, at least regionally, to review targeted HIV print and web-based documents. A contribution of this study is the development of the scorecard, as it can serve as a rubric for developing and evaluating current and new materials.

This type of project, creating and disseminating HIV PEM targeting older adults, can be supported by local universities and involve students and faculty in a myriad of ways, offering an additional layer of service learning by engaging with a community need and community agencies. By taking this approach, it allows for a rigorous assessment suited for the context of that area and population. Lastly, continued training of service providers will increase competency and facilitate discussion around areas of knowledge about the needs of older adults. In a qualitative study on increasing HIV prevention in primary care settings for older adults, health-care providers indicated that public health efforts to educate older patients would help reduce risk and increase knowledge.²⁹ Health providers have expressed that while they are willing to increase their HIV prevention efforts among older adults, they need assistance.²⁹ By improving provider education, we can continue to work on demystifying and undoing stigmas related to older adults and HIV risk behaviors. This is a crucial step as we move through the fourth decade of HIV/AIDS with an increasing number of older adults living with HIV and AIDS and becoming newly infected later in life.⁴⁵

Conclusions

Older adults should be encouraged to talk about their lifestyle practices, especially those that can place them at risk for HIV transmission. Several organizations and entities have developed materials that aim to provide factual information about HIV transmission, prevention, and testing targeted at an older

population. Unfortunately, those that exist do not meet specific risk reduction strategies that target older adults. Existing materials typically do not contain complete information about age-related circumstances and greater likelihood of engaging in high-risk activities, a personal HIV/AIDS risk assessment tool, information related to HIV testing protocol, and same-sex couple risk reduction strategies, to name a few. If older adults are to truly make educated decisions about lifestyle practices that reduce their risk of HIV transmission, better HIV prevention materials must be developed.

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Supplemental Material

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