

Grant Final Report

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**Tailored DVD to Improve Medication Management for
Low Literate Elderly Patients**

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Abstract

Purpose: To create individualized, culturally- and linguistically-inclusive education materials for older adults from diverse backgrounds tailored to electronic medication information.

Scope: Geriatric experts rank drug therapy management as the top condition in need of targeted improvement in elderly persons. The diversity of the population to be served and their specific medication management issues, coupled with the limited time physicians have to discuss medication issues, makes tailored video interventions an appealing strategy.

Methods: We performed a systematic review, analyzed existing data, conducted exploratory focus groups, and conducted telephone surveys to gain insights on areas for improvement in patient-provider communication, and suggested use of vignettes and testimonials. Participants recruited from community settings and clinics completed the entire protocol (n=132). Surveys captured information on knowledge, behaviors, self-efficacy, and satisfaction with DVDs.

Results: The findings from the systematic review supported the need for messages to empower patients, provide tips for medication taking and communication, as well as the need to focus DVD segments on highly prevalent diseases, conditions, and medications. Analysis of focus groups revealed that older adults made varying yet concerted decisions about taking their medications differently than prescribed, they usually did not disclose these modifications to their physicians, and they did not recognize the potential dangers to their health that can ensue. Upon viewing, participants could relate to the testimonials in which actors portrayed people who have problems with their medications and were interested in the medication advice presented by health care professionals. Overwhelmingly, the response to the DVDs and print materials was positive. The length of the DVDs was "just right" (90+%), with 40% sharing the DVD and 48.4% watching the DVDs more than once. Changes in knowledge and behaviors were realized for some of the diseases/conditions, yet small sample sizes limited ability to detect differences for others. Seventy-six percent reported that the DVDs were helpful.

Key Words: health information technology, elderly, medication information

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Final Report

Purpose

The availability of a medication history provides the opportunity to create tailored interventions based on the particular medication issues a patient may be experiencing. We hypothesized that this information could be harnessed to develop tailored patient education DVDs and materials specifically developed for low-literate audiences to empower patients and their caregivers to participate in treatment decisions and negotiate acceptable medication regimens that are more amenable to follow-through. The research focused on developing and testing interventions to improve the patient experience of care through health information technology and the self-management of chronic conditions. The specific aims were:

1. To develop algorithms which identified potential medication management issues based on medication information
2. To develop tailored print materials tailored to geriatric patients' drug regimens to assist geriatric patients in adhering to complex medication regimens
3. To develop tailored instructional DVDs which focused on improving the geriatric patient's role in patient-provider communication regarding medication issues and adherence to medication regimens
4. To pre-test these interventions with versions in English and Spanish as part of a feasibility study of low literate geriatric patients

Scope

This grant was conducted as part of the Ambulatory Care Setting: Enabling Patient-Centered Care through Health IT initiative. As such, the focus of the research was to create innovative uses of ambulatory health care system data to encourage patient self-management. By creating DVDs in English and Spanish, the project sought to improve the delivery of patient-centered health information so that patients have the information needed to make better health care decisions. Using data electronic pharmacy transaction data or patient self-report medication information, we created computer algorithms which ultimately generated a series of medication education DVDs and print materials in both English and Spanish.

Background

In the US, 12% of the population is at least 65 years of age.¹ Growth will occur in all racial and ethnic groups. In the outpatient setting, the most common type of decision that physicians make during such visits are medication decisions. An expert panel ranked pharmacologic management as the top condition in need of such targeting.² In *To Err is Human* the Institute of Medicine (IOM) reinforces the need for improving drug therapy in a population taking multiple medications and having co-morbidities.³ With medications, doctors initiate discussion, but leave little room for patient interaction.⁴ With multiple co-morbidities requiring multiple drug therapy, poor health literacy may increase the likelihood of poor outcomes.⁵ Clinicians also underestimate their patients' desire for information about their treatments.⁶ In particular, physicians may be reluctant to give information about the possible side effects of a drug.⁷ Despite their patients' desire for more information on the potential risks of medications and precautions that should be taken, clinicians are more apt to discuss the benefits of therapy. Further, a paradox exists in how health care providers educate their patients. With reduced time for face-to-face interactions, health care providers often provide written educational materials to patients. Yet, the average American reads at the 8/9th grade level, meaning much written health information might not be understood even by those with average reading ability.

Context

Virtually all households in North America have a television,⁸ with 8 in 10 Americans also having DVD equipment.⁹ The typical viewer spends 3.5 hours a week watching video/DVDs. Using this medium for a patient education method is practical. While the initial cost of video production is somewhat high, a virtually unlimited number of DVDs can be produced very inexpensively.¹⁰ Moreover, with the production of a large number of video segments, these segments can be used again and again for varied types of health education programs. Videos have the potential to make accurate information regarding medication management available in a convenient, usable and acceptable way to the population in a time-, energy-, and cost-efficient way. DVDs demonstrate procedures and concepts that might be difficult to explain or translate in print, and they can circumvent the problem of illiteracy, both in English and other languages.¹¹ DVDs are usually more visually stimulating than traditional teaching techniques and can increase learner interest and learning retention.¹² Low literate Americans (and even those who can read) frequently depend on non-written means of communication to obtain health-related information including television and radio, personal experience, demonstration, and oral explanations. For geriatric patients, 97% report that television is a principal source of health information, regardless of their literacy level.¹³ Videotaped instruction may be as effective as other instructional methods and often more effective than printed materials alone. While not proven for medication adherence,¹⁴ studies in other areas support this notion.¹⁵

Settings

This study was predominantly conducted in Rhode Island (RI), Massachusetts (MA), and Richmond, Virginia. We worked closely with community organizations in RI and MA (senior centers, senior housing developments and ethnic community organizations in low-income areas)

and VCU physician clinics using community-pharmacy based medication history from a Cerner's Ambulatory electronic medical record (EMR) system. The ambulatory care settings had to have a sufficient number of Medicare eligible patients (>25% of practice).

Participants

To be eligible for participation, men and women had to be at least 60 years of age, read basic English or Spanish, have no moderate to severe cognitive impairments, nor significant visual and/or hearing impairments or medical conditions that are uncorrectable with glasses or hearing aids. The participants gave informed consent, had a valid telephone number and address, and were able to complete the baseline assessments. The low cost of DVD players enabled us to be able to provide a DVD player for the participants who did not have one. When necessary, we sent research assistants to participants' homes to install the DVD and provide instructions to the participants on how to use it.

Incidence

The incidence of adverse drug events has been estimated to be 27.4% amongst community dwelling adults. The financial burden of preventable ADEs among Medicare recipients in the ambulatory setting is estimated to cost at least \$887 million dollars.

Prevalence

In the US, 12% of the population is at least 65 years of age. Growth will occur in all racial and ethnic groups. The per capita health expenditure is five times higher for those aged 65 and older compared to persons under the age of 65. Elderly persons consume 31% of all medications prescribed.

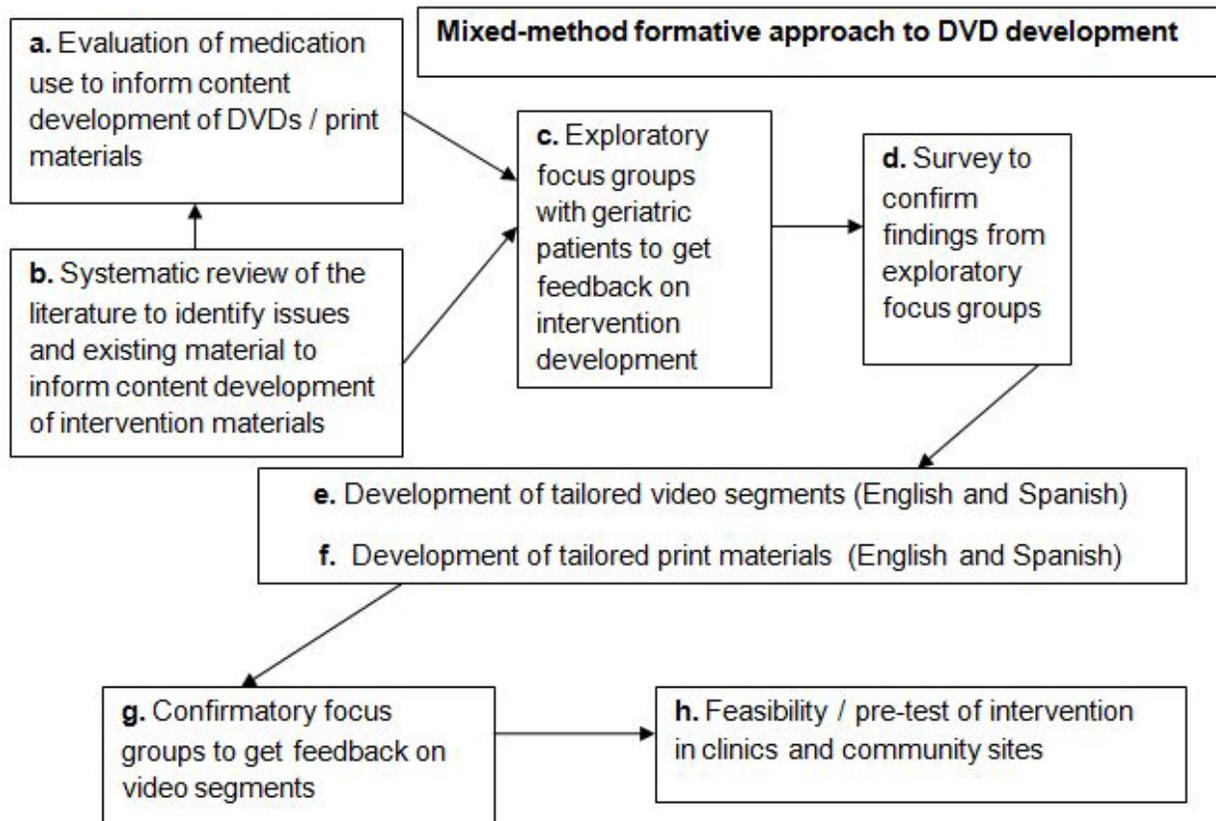
Methods

Study Design

The research used a mixed-method design. Figure 1 shows the overview of the research design. Quantitative survey data can reveal general information for a large group of people, but often fails to provide specific answers, reasons, or examples. On the other hand, qualitative data from focus groups can yield specific information, but is often not as generalizable because of the small numbers and narrow range of participants involved. Both types of methods have different strengths and weaknesses, so using the combination of methods provided us with the most useful feedback so that the written materials and the videos are appropriate for our target audiences. As such, we performed a systematic review, analyzed existing data, conducted exploratory focus groups, and then conducted telephone surveys with a more representative cross-section of the population. All of these data were evaluated using a group data analysis approach called immersion/crystallization. We listened to selected focus group recordings. Each team member

was assigned primary responsibility for an evaluation approach. We identified DVD topics to include, what the content should be, design elements, and how best to approach the content so that it would be appropriate to our intended audience. We triangulated the findings from the different data sources. Although time-intensive, it was the most comprehensive approach to adapting materials for hard-to-reach populations. Based on these findings, we developed DVDs and print materials **in English and Spanish**. In the feasibility study, we recruited English and Spanish-speaking elderly patients from health clinics serving low income populations and senior community centers.

Figure 1. Overview of mixed-method research design



Data Sources/Collection

To inform script development, we searched MEDLINE (1970-2006), International Pharmaceutical Abstracts (1970-2006) and marketing, education, and psychology databases to look for evidence suggesting which specific topics would be appropriate for tailored interventions. We also conducted descriptive analyses (stratified by age, gender and race/ethnicity) of population-based data sources, as well as medication history files, to identify highly prevalent diseases, conditions, or medications used by the intended population.

Focus Groups. Exploratory focus groups were about 2 hours, and used an open-ended, interactive approach. The focus group script development was informed by the literature review and insights from our individual disciplines. A core set of questions was asked, supplemented by spontaneous question probes or follow-up questions. These were digitally audio recorded and professionally transcribed in the original English or Spanish. Following completion of draft versions of the DVDs, we conducted two confirmatory focus groups to obtain feedback about the DVDs before implementing the feasibility study.

Survey. We designed a 10 to 15 minute telephone survey to understand themes that emerged from the exploratory focus groups in a larger, diverse, community-dwelling sample of older adults aged at least 65 years. We purchased a sampling frame from Genesys Sampling, Inc (Fort Washington, PA), and selected block groups with a high proportion of incomes less than \$25,000 and persons over 65 years of age from a listed sample (i.e. white page data), and identified three sampling frames of block groups: 1) at least 77.5% Blacks; 2) at least 31% Spanish-speaking; 3) high proportion of non-Hispanic Whites. The survey included questions regarding medication-taking behaviors, as interactions between respondents and their health care teams relating to medication-use. This survey also included items from the CAHPs instrument. Results from the analyses were also shared at team meetings. For the feasibility study, we also designed surveys specifically related to the intervention. The surveys were completed at baseline and then again after the DVDs were viewed. The surveys captured information on knowledge, behaviors, and self-efficacy for each of the video content areas. The surveys also included information regarding the use of the print materials and the DVDs such as frequency of viewing, length of video, sharing of video.

IOM Priority Areas

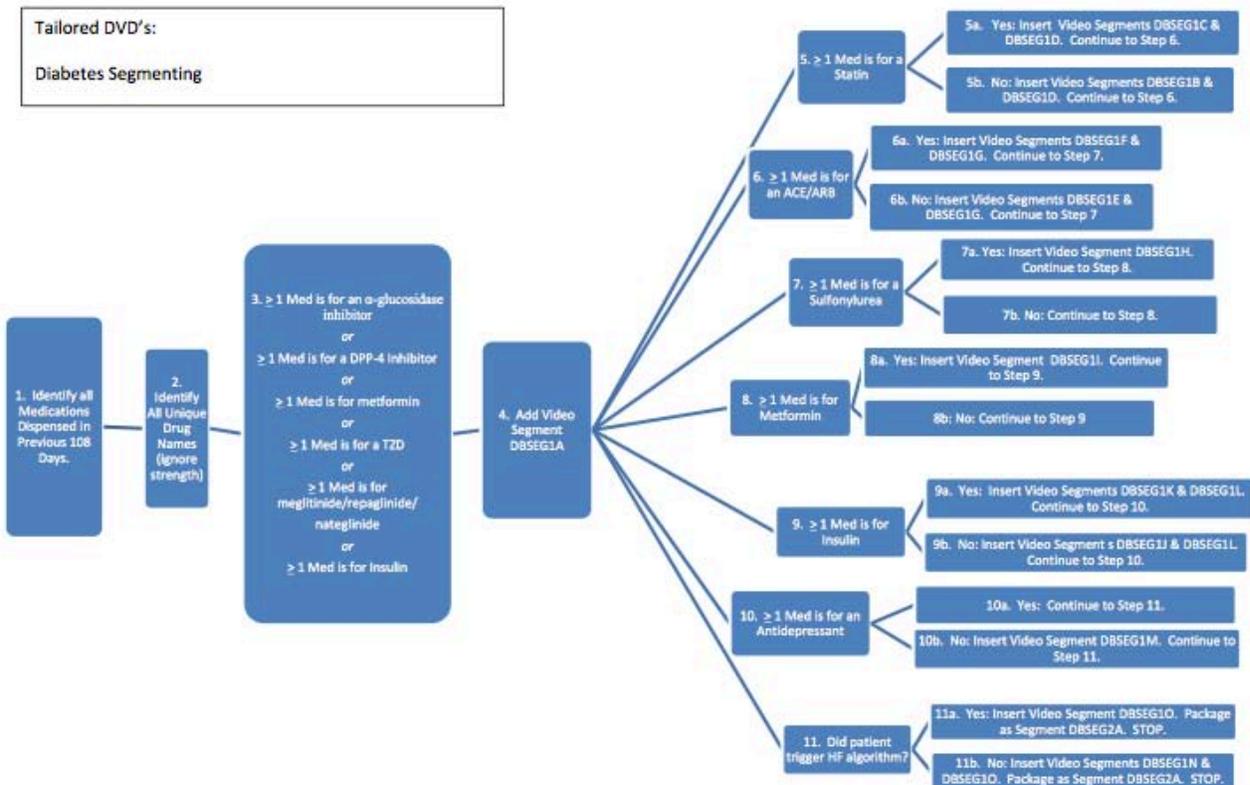
This study addressed: depression, diabetes, self-management and health literacy, medication management, and frailty associated with old age.

Interventions

Based on the analyses, we created DVDs and print materials for general tips, warfarin use, insomnia, depression, heart failure, and diabetes. Print materials were developed by the research team. Scripts were also developed by the research team. For DVDs, we identified a professional film company that supplied a producer/director; film crew; recruitment of professional actors; film-making technology including cameras, lights, set supplies, and teleprompter; and some location scouting. The company had difficulty finding talent to represent older adults from multiple racial/ethnic groups. Our team recruited English and Spanish speaking older adults who are not professional actors for both speaking and silent “B-roll” parts. Because the locations we desired for shooting were so specific to our needs, and because we wanted to have as much interest in the visuals as possible, we secured multiple community locations for filming including a pharmacy, physician practices, and private residences such that we filmed in 25 different indoor locations and many more outdoor locations. We also involved a widely diverse cast of individuals (10 professional actors; 55 non-professional actors of varying ethnic backgrounds). We most certainly increased the complexity of the project because we had to plan the shoot, pick

locations, identify talent, select wardrobes and get other props ready for the entire project, because we filmed scenes out of sequence to maximize the amount of video produced for the budget provided. To save money, we also used silently-filmed “B-roll” for visual scenes that could be used with English and Spanish voice over. The complete DVDs averaged 16 to 36 minutes in English. Spanish DVDs were longer due to the nature of the language. Figure 2 shows a sample algorithm to generate a tailored diabetes DVD. We developed algorithms for each DVD topic. At each stage, specific medications were used and segments relating to the use (or non-use) of specific medications were inserted such that the DVDs were individualized to the specific drug regimen of each patient. Algorithms were developed with clinical input from team members and were tested to work with various data streams (e.g. electronic medical record, pharmacy transaction data, medication lists provided directly by patients). We used free text of drug names (brand and generic) instead of specific drug coding systems to allow for use with any system. Two pharmacists independently reviewed the coding of the drug names to assure completeness of the algorithms. We demonstrated "proof of concept" as the automation of the DVD generation process was implemented (interface with the EMR, as well as ability for self-reported data). SAS programs read the data files generated from the EMR (as EXCEL file) or directly from the patient surveys (as EXCEL file) and generated ROCKET DVD System text file to create the DVDs.

Figure 2. Example of algorithm to generate diabetes DVD



Measures

For each of the video segments, participants were asked a series of questions related to whether they watched the DVD or used the print materials, if they watched it repeatedly, and if they shared the intervention materials with family or friends. Participants were also asked if the length was too long or short, if they would have preferred everything in one mailing, and if they found the materials to be relevant to their lives. To measure changes in patient self-management, for each topic, we asked questions at baseline and follow-up about knowledge, behaviors, and self-efficacy. We hypothesized that increases in knowledge and self-efficacy would be realized after watching the DVDs and reading the print material.

Limitations

This approach brought to light several limitations.

Data Streams. Data streams available are not 100% accurate or complete. We did not believe that this strategy would be useful to develop tools such as medication checklists or pill box filling instructions. We thought that if the lists were not 100% accurate and complete, we may cause harm to participants. Thus, we decided to conservatively use the approach that if anything, we would create print materials and DVDs that may provide more information that the participants may not feel was relevant. Further challenges include the lack of systematic coding of SIG. The free text which indicates instructions may not reflect how patients actually take medications. Extreme caution must be taken to assure accurate and complete information before automating such medication reminder checklists or pill box instructions. Indeed, we also learned that medication histories in the VCU clinics did not match up well with information included by self-report of the patients. We decided to write code to allow for different streams of data to interface with the tailoring of the DVDs.

Spanish Versions. Coming to a final Spanish version of the segments was an iterative, time-intensive process. During filming, each Spanish speaking actor voiced strong opinions about wording, phrasing, and syntax that needed to be unexpectedly reconciled. We tried to use language appropriate for the widest range of Spanish speaking older adults. The scientific team was present during all filming to contribute to direction and script revision decisions. We also had the same challenges when developing the survey instruments. Cognitive interviews of the tools revealed strong opinions about wording that we modified.

Results

Principal Findings

We enrolled 105 participants in the focus groups. Participants made varying yet concerted decisions about taking their medications differently than prescribed, they usually did not disclose these modifications to their physicians, and they did not recognize the potential dangers to their

health that can ensue. The burden of taking so many medications influenced decisions to stop taking medications or to skip doses. Remembering to take evening doses was more problematic than morning doses. Participants reported trusting that physicians accurately maintained their medication histories. When advised by their physicians, participants wanted to know about suggestions to exercise and change diet to avoid medication therapy. These disclosures aided the team in looking at receipt of appropriate care with respect to medication management, one of the required AHRQ outcome measures. These focus groups also allowed the team to understand and describe these participants' experience with care, another AHRQ required outcome measures.

In the feasibility study, we enrolled 72 participants through community centers in Rhode Island and Massachusetts and 68 completed the protocol which required one follow-up assessment (94.4%). In Virginia, 232 patients were referred of which 74 were ineligible (16 due to age, 18 could not be reached, 13 did not pass the cognitive screen, and 27 did not have either heart failure or diabetes), and 77 were not interested in the study. We consented 77 persons in Virginia: 74 completed the baseline, 72 completed the first follow-up assessment, 67 completed the second, and 66 and 64 completed the third and fourth follow-up assessments, respectively. One participant died during the follow-up period. Thus, 86.5% of persons completing the baseline assessment (n = 146) finished the entire protocol (n = 132).

Outcomes

Patient Reported Experience with Care. Using CAHPs questions, we learned that the majority of participants in the white and black focus groups felt physicians did not adequately explained to them about their medications and the possible side effects whereas most Latino participants felt that they had sufficient discussion about medications with their physicians. Less than 20% of participants who finished the entire protocol reported that they asked their doctor to explain what the medicines they took were for at every visit. Even fewer (less than 10%) reported asking the doctor about side effects or telling the doctor about problems with their medications at every visit. Slightly less than half of the participants (44%) reported telling their physician if they were taking medications as prescribed at every visit. These questions were modified from the CAHPs questionnaire, to determine patient reported experience with care. It was necessary to modify the questions for the low literate nature of the participant population. Receiving quality care was an issue in this population.

Receipt of Appropriate Care for Treatment and Management of the IOM's Priority Areas. Among diabetes patients, over a quarter (26.8%) were not taking any of the medications in an appropriate care regimen, consisting of a statin, an antihypertensive drug such as an ACE or ARB, and either metformin, insulin, or a sulfonylurea. Only 2.44% were taking all 3 and 9.76% taking an antidiabetic agent. Among heart failure patients, nearly 40% were not taking any of the drugs that would be classified as a component of an appropriate heart failure medication regimen, e.g. an ACE or ARB, a diuretic, and a beta blocker, for treatment and management. Only 8.7% were receiving all three treatments.

Other Outcomes. Sixty-eight percent of participants who finished the entire protocol found the DVDs to be very helpful, with 62% reporting that the content was very relevant to their lives. A vast majority (95.4%) said that the lengths of the DVDs were just right. Most (96.9%) said they preferred having the DVDs given to them spaced apart, rather than all at once. They also

found the spacing of the DVD delivery to be just right (87.7%). When asked if they would have watched the "Shows" on TV if they were offered, 87.7% said they would. Twelve percent watched the DVDs with friends, and 28.3% watched them with family members. While 51.6% watched the DVDs only once, 39.5% watched them twice, and the remainder watched them at least 3 times. Nearly one quarter shared the DVDs with family members and 11% shared them with friends. Seventy-six percent reported that the DVDs were helpful. The number of participants who shared, enjoyed, and watched the DVDs more than once is indicative of the potential impact of these materials in low-resourced urban safety-net settings, another of the AHRQ required outcome measures.

Regarding the print materials, 67% reported that they were very helpful and 61% reported the print materials were very relevant to their lives. Ninety one percent said the amount of print materials they received were just right. Forty percent of participants reported using the pill box sent, 16% reported use of the weight tracker, and 14% reported use of the medication list tool.

Among participants with heart failure, 62% reported watching the DVDs more than once. Among participants with diabetes, 51% watched the DVDs multiple times. One third of participants with diabetes watched with family and 100% reported that the DVDs were helpful and relevant to their lives. Participants with heart failure were more likely to share their print materials with family and friends relative to participants with diabetes (58.3% vs. 18.2% shared with family, heart failure and diabetic participants respectively; 16.7% vs. 9.1% shared with friends, heart failure and diabetic participants, respectively). Despite the length of the videos, over 90% of each participant group reported the length was just right.

Fifty-eight percent reported using at least five different kinds of medications in the past month with 55% reporting at least the use of one over the counter product in the past month. Twenty percent report intentional skipping of dosing, and 55% report they never forget to take medications. Eighteen percent report skipping medicine to avoid side effects, 17% because taking it was inconvenient, and 16% reported skipping medicines because they needed a break. In general, follow-up questionnaires revealed changes in a positive direction for medication self-management including self-efficacy, reading labels, storing medications, and getting help with medications. Depressive symptoms were common among participants (50%). Depression knowledge scores did not change (overall, or by language) after watching the DVDs. After viewing of DVDs, diabetes knowledge scores changed significantly ($p=0.008$) with similar effects regardless of language spoken. No changes were observed with respect to self-efficacy and attitudes. Participants sleep knowledge and sleep hygiene scores changed significantly after viewing the DVDs ($p<0.0001$) with stronger effects observed in those who spoke Spanish relative to the English speakers. Significant changes in self-reported sleep behaviors ($p=0.02$) and sleep related self-efficacy ($p=0.003$) were observed.

AHRQ Desired Outcomes. This project did not evaluate the extent to which patients were able to access reports of ambulatory care quality and safety for their providers, the percent of eligible patients within the practices that they partner with who have access to their personal health information, including medication therapy, and/or customized decision support, patients' access to and utilization of quality measurement reports of their providers, and the percent of ambulatory clinicians within the practices that they partner with who routinely use measurement tools to evaluate their patient's experience.

Discussion

Health care providers often give written educational materials which require 9th-14th grade reading levels to comprehend. Patients with low literacy have difficulty with warnings on prescription labels, let alone lengthy medication information leaflets. We found that tailored medication education materials in English and Spanish are suitable for low-literate audiences, acceptable to older adults, and feasible to implement. Participants in our review focus groups could relate to the testimonials in which actors portrayed people who have problems with their medications and were interested in the medication advice presented, especially when it was presented by a health care professional. DVDs can be used to demonstrate procedures and concepts that might be difficult to explain in print, and they can circumvent the problem of low literacy, both in English and other languages. Further, the use of this technology assures a standard level of teaching and a consistent core of information not subject to the varying abilities or opinions of different educators. DVDs are usually more visually stimulating than traditional teaching techniques and can increase learner interest and learning retention.

The DVDs changed knowledge and self-efficacy in some areas, but not others. For some analyses (heart failure), we did not have adequate power to evaluate changes in knowledge, self-efficacy, or behaviors. It may be that the protocol did not allow enough time for behavior changes to occur. Also, we needed to modify the tools that we used to meet the needs of a low-literate, ethnically diverse population. In doing so, we may have introduced measurement error, which would have diluted any impact observed.

Nevertheless, participants overwhelmingly wanted the information on the DVDs and felt that how we implemented the DVDs (length, timing, and print materials) was just right. That often these materials were shared among family and friends and the tools provided were used is a good indication that they intervention materials were well-received. The extent to which the intervention will impact health outcomes must be studied.

With respect to the required outcome measures for the RFA, the team was unable to ascertain whether patients are able to access reports of ambulatory care quality and safety for their providers, or the percent of eligible patients within the practices that they partner with who have access to their personal health information, including medication therapy and customized decision support. The team was also unable to determine patients' access to and utilization of quality measurement reports of their providers and the percent of ambulatory clinicians within the practices that they partner with who routinely use measurement tools to evaluate their patient's experience.

Conclusions

As the geriatric patient population grows, and use of multiple medications within this group persists as the norm, it becomes more important than ever to find novel ways to educate and engage older adults regarding medication use and safety. Tailored DVDs based on electronic medication data have the potential to directly address the needs of older adults in that the DVD format is engaging, clearly informative, suitable for audiences with low literacy levels, can be conveniently viewed at home repeated times, and conveys personally meaningful information to each individual.

Significance

Virtually all households in the U.S. have a television, with 8 in 10 also having DVD equipment. While the initial cost of DVD production is somewhat high, reproduction is inexpensive and has the potential to make accurate information regarding medication management available to diverse populations in a convenient, acceptable, and cost-efficient way. Clearly, different mechanisms are needed to provide information to older adults and low literature adults. The findings of this study support the notion that DVDs are a viable mechanism to provide such information. Another opportunity for provision of medication information is via community pharmacies. The distribution of consumer medication information is effective, however, the content, format, reading level, and excessive length of informational materials is not. The extent to which integration of tailored DVDs for home viewing via community pharmacy is acceptable to older adults with diverse backgrounds remains unknown. Also, before promoting widespread diffusion of this approach, the impact of tailored medication education DVDs on health outcomes needs to be proven in larger study.

Implications

Older adults appreciated having tailored medication education DVDs. They watched the DVDS, often more than once and shared the information with family members. This study has shown that this approach is feasible and agreeable to the older adult consumer.

Inclusion of AHRQ Priority Populations

Our project sought to create culturally and linguistically appropriate medication education materials for low income, ethnically diverse populations. As such, this research reached several AHRQ inclusion populations, specifically low-income and minority populations. Across all the elements of the research, we included 31% Latinos and 30% Black participants. Regardless of race or ethnicity, we found that older adults made decisions about medication use that may not be consistent with the regimens as prescribed. Among this low-income population, regardless of race or ethnicity, we consistently heard concerns from participants about being overwhelmed with medication regimens and wanting a break from having to take so many different medications. Latinos more frequently reported discussions with providers about medication use, a finding we are delving into further as it is inconsistent with previous literature. Also, we observed no differences by race or ethnic group with respect to satisfaction with the DVDs and print materials, or change in behaviors or self-efficacy. The DVDs and print materials were consistent in message, themes, content, and style, but varied in language. DVDs were multi-ethnic in that we included persons of difference races or ethnicities as actors. This effort is likely to have improved satisfaction and impact of the DVDS across all race/ethnic groups included in the study. The inclusion enrollment report on the following page provides the breakdown of participants by gender, race and ethnicity.

Figure 3. Inclusion enrollment report

Program Director/Principal Investigator (Last, First, Middle): Lapane, Kate L.

Inclusion Enrollment Report

This report format should NOT be used for data collection from study participants.

Study Title: Tailored DVD to Improve Medication Management for Low Literate Elderly Patients
 Total Enrollment: 570 Protocol Number: HM11649
 Grant Number: R18HS017281

PART A. TOTAL ENROLLMENT REPORT: Number of Subjects Enrolled to Date (Cumulative) by Ethnicity and Race				
Ethnic Category	Females	Males	Sex/Gender Unknown or Not Reported	Total
Hispanic or Latino	136	46	0	182 **
Not Hispanic or Latino	316	72	0	388
Unknown (individuals not reporting ethnicity)	0	0	0	0
Ethnic Category: Total of All Subjects*	452	118	0	570 *
Racial Categories				
American Indian/Alaska Native	8	1	0	9
Asian	0	1	0	1
Native Hawaiian or Other Pacific Islander	0	0	0	0
Black or African American	139	35	0	174
White	206	65	0	271
More Than One Race	0	0	0	0
Unknown or Not Reported	79	25	11	115
Racial Categories: Total of All Subjects*	432	127	11	570 *
PART B. HISPANIC ENROLLMENT REPORT: Number of Hispanics or Latinos Enrolled to Date (Cumulative)				
Racial Categories	Females	Males	Sex/Gender Unknown or Not Reported	Total
American Indian or Alaska Native	4	1	0	5
Asian	0	0	0	0
Native Hawaiian or Other Pacific Islander	0	0	0	0
Black or African American	5	0	0	5
White	33	14	0	47
More Than One Race	0	0	0	0
Unknown or Not Reported	94	31	0	7
Racial Categories: Total of Hispanics or Latinos**	136	46	0	182 **

* These totals must agree.

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List of Publications and Products

No articles from this study are in press at the time of the filing of this report. Three articles are currently under review.

1. Goldman RE, Quilliam BJ, Hume AL, Eaton CE, Lapane KL. Talking about medicines: Older adults' perceptions of communication with their physicians, under review *Patient Education and Counseling*
2. Quilliam BJ, Goldman RE, Hume AL, Eaton CB, Lapane KL. Medication Management Beliefs and Practices Of Low Income Older Adults From Diverse Racial/Ethnic Populations, under review *Annals of Family Medicine*