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PRE-PRINT VERSION

**Efforts to Reduce Consumer Fraud Victimization Among the Elderly:
The Effect of Information Access on Program Awareness and Contact***

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**Efforts to Reduce Consumer Fraud Victimization Among the Elderly:
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ABSTRACT

Concern about the risk of consumer fraud victimization among the elderly has led to programs that disseminate fraud prevention information and provide services. However, little is known about how seniors access such information or learn about or contact these programs. Drawing on scholarship on fraud, media consumption, and the fear of crime, this study contributes to efforts to understand and reduce consumer fraud victimization. Analyses of data from adults age 60 and over demonstrate that certain segments of the elderly population access a greater variety of information sources to learn about fraud prevention. In turn, such access is associated with greater fraud prevention program awareness and contact.

Key words: consumer fraud, crime prevention, elderly victimization

INTRODUCTION

Consumer fraud that targets the elderly is an increasingly prominent social problem that has garnered scholarly and policymaker attention (Bonnie & Wallace, 2003; Payne & Strasser, 2012; Reisig & Holtfreter, 2013; Sklar, 2000). Recently, for example, the U.S. Government Accountability Office (2012) called for a national strategy for addressing financial exploitation of the elderly. Victimization of this type involves the “intentional deception or attempted deception of a victim with the promise of goods, services, or other benefits that are nonexistent, unnecessary, were never intended to be provided, or were grossly misrepresented” (Titus, 2001, p. 57). Estimates of the prevalence of fraud victimization indicate that, in 2011, approximately 11 percent of Americans, or 26 million individuals, were victimized (Anderson, 2013, p. 17). The percentage targeted but not victimized tends to be greater; some estimates indicate that one-third of citizens are fraud targets (Holtfreter, Reisig, Mears, & Wolfe, 2014; Reisig & Holtfreter, 2013). The aging of the U.S. population and the increased availability of fraud opportunities through online scams have generated greater interest in developing theoretical accounts aimed at understanding the causes of fraud victimization and in empirical research that identifies risk factors for it (Bonnie & Wallace, 2003; Daly, Merchant, & Jogerst, 2011; Reynolds, 2013). The elderly, in particular, have constituted a focal concern because of their greater vulnerability to consumer fraud victimization, a vulnerability that results in part from the reduced ability of individuals to make effective financial decisions as they age (Blieszner & Bedford, 2012; Hafemeister, 2003; Klaus, 2005; Martin, 2009; Nguyen, Barrash, Koenigs, Bechara, et al., 2013).

One of the main approaches recommended for reducing elderly consumer fraud victimization consists of social service, legal, and education programs, coordinated through state or local agencies, that provide crime prevention information and assistance (Fitzpatrick & Hamill, 2011; Reeves & Wysong, 2010). Such efforts remain largely unevaluated, and so their effectiveness remains unknown (Daly et al., 2011; Hafemeister, 2003; Johnson, 2002). Even so, they are a mainstay of efforts to reduce consumer fraud among the elderly. The logic is that providing the

elderly with information should lead them to safeguard better their finances and to take steps to reduce victimization risk. Any such effort hinges on the elderly knowing that such programs exist and in turn contacting them. However, to date, research is largely silent on the ways in which the elderly access information about consumer fraud prevention and whether information access is associated with contacting fraud prevention programs. In addition, it remains unclear which segments of the elderly population are best reached through particular types of media (e.g., radio, phone, e-mail) when attempting to disseminate fraud prevention information.

The goal of this study is to address this research gap and, in particular, to contribute to scholarship aimed at identifying ways to increase understanding of consumer fraud and how different at-risk populations might be educated about steps that they can take to reduce the likelihood of victimization. To this end, the paper begins by describing elderly consumer fraud victimization and efforts, which generally draw on an opportunity theoretical framework, to combat it. The focus then turns to discussion of elderly fraud prevention efforts and the emergence of programs that provide fraud prevention education and assistance to the elderly. We draw on scholarship on consumer fraud, media consumption, and fear of crime to ground this discussion and the analyses. After describing the study and the data and methods, the findings are presented and their implications for theory, research, and policy are discussed.

BACKGROUND

Elderly Fraud Victimization

The elderly constitute an at-risk population that scholarship suggests may be especially vulnerable to consumer fraud victimization (Daly et al., 2011; Hafemeister, 2003; Reisig & Holtfreter, 2013; Sooryanarayana, Choo, & Hairi, 2013). A central reason is that, on average, as individuals age, their ability to make effective financial decisions declines; at the same time, they typically live alone and have more savings and financial assets than do younger individuals (Blieszner & Bedford, 2012; Klaus, 2005; Lee & Geistfeld, 1999; Martin, 2009; Nguyen et al.,

2013). The elderly, too, are vulnerable to victimization not only by strangers but also by family, friends, or trusted business or service professionals (MetLife Mature Market Institute, 2009; Ploeg, Fear, Hutchinson, MacMillan, & Bolan, 2009; Reeves & Wysong, 2010; Sklar, 2000).

The importance of focusing on the elderly lies not only in their greater risk of victimization but also in the fact that an estimated 41 million people in the United States—13 percent of the total population—are age 65 or over and that by 2060, this segment of the U.S. population is expected to consist of 92 million individuals, or approximately 20 percent of the total U.S. population (U.S. Census Bureau, 2012; see also Federal Interagency Forum on Aging-Related Statistics, 2010). Studies indicate that elder financial abuse alone may result in over \$2.6 billion in losses annually and can contribute to a loss of independence, a reduced quality of life, depression, anxiety, and even death among victims (Dessin, 2000; Hafemeister, 2003).

In addition to the greater potential risk of fraud victimization and to becoming an ever-larger proportion of the U.S. population, the elderly typically underreport victimization (Fitzpatrick & Hamill, 2010). Together with the substantial harms that arise from victimization, including the financial impacts and their adverse sequelae, such considerations have given rise to programs aimed at preventing and reducing elderly consumer fraud victimization.

Efforts to Reduce Elderly Fraud Victimization

Despite the considerable attention given in recent years to efforts aimed at combating elderly fraud victimization, little is known about the effectiveness of these efforts (Daly et al., 2011; Hafemeister, 2003; Johnson, 2003). In part, the situation stems from the fact that underreporting of elderly fraud makes it difficult to intervene (Fitzpatrick & Hamill, 2010; Johnson, 2003). Primarily, however, the situation results from the limited number of rigorous empirical evaluations of elderly fraud prevention efforts (Daly et al., 2011; Dessin, 2000; Hafemeister, 2003; Navarro, Gassoumis, & Wilber, 2012; Ploeg et al., 2009; Reeves & Wysong, 2000).

These efforts generally fall into four categories: education of and outreach to the elderly;

screening programs; legal interventions; and community responses (Nerenberg, 2006; Reeves & Wysong, 2010). Information and assistance efforts—which include the use of telephone hotlines, brochures, newsletters, and legal or health services coordination or provision—have been viewed as especially critical given fraud underreporting, the social isolation of the elderly, and the risk of victimization from friends, family members, and service providers. These types of efforts are especially common (Johnson, 2003; Nerenberg, 2006; Reeves & Wysong, 2010; U. S. Government Accountability Office, 2012), yet remain largely unevaluated.

The central theoretical logic underlying information-based efforts is opportunity theory (Reisig & Holtfreter, 2013; van Wilsem, 2011). The theory, including variants, such as lifestyle routine activity theory (Felson & Boba, 2010), argues that an individual’s surroundings or activities can affect the likelihood of victimization. For example, individuals who implement guardianship measures should be less likely to be victimized. Similarly, limiting exposure and proximity to would-be offenders should decrease victimization. Reducing target attractiveness, too—for example, limiting the availability of information that could cue offenders about one’s financial holdings—should further inhibit it. The theory has been used to explain the occurrence of different types of victimization, including fraud. For example, remote-purchasing activities, such as buying from online retailers and responding to telemarketer calls, are associated with greater fraud targeting (Holtfreter, Reisig, & Pratt, 2008). Similarly, spending greater amounts of time online or making purchases from web sites—which increases exposure to would-be offenders—predicts such targeting (Pratt, Holtfreter, & Reisig, 2010). Even so, programs built on an opportunity theory logic—such as those that educate the elderly about strategies that they can use to reduce the likelihood of targeting or victimization—or that provide consumer fraud prevention and victimization services have not been subject to systematic empirical assessment.

Information and Program Awareness and Contact

The lynchpin to the potential effectiveness of programs that focus on disseminating crime

prevention information depends in part on the extent to which individuals actually receive or access informational material through various media. Yet, scant attention has been given to identifying the extent to which the elderly access media for information about crime prevention, how such access may vary among different segments of the elderly population, or, in turn, how it is related to contacting programs for materials or assistance. Here, then, drawing on insights from scholarship from two related areas—media consumption and the fear of crime—we focus on several demographic divides that may pattern media access and, in turn, program awareness and contact. The salience of insights from research on the fear of crime lies in the potential for fear to motivate, in part, individuals, especially those who feel vulnerable to criminal victimization (Liu, Messner, Zhang, & Zhou, 2009), to seek information and assistance that might reduce the likelihood of victimization. We also focus on two factors of potentially central relevance to elderly awareness and contact of consumer fraud prevention information and services: how well individuals manage their finances and the extent to which they undertake a type of financial activity, remote purchasing, that puts them at greater risk of victimization.

Age constitutes one of the most significant divides in the literature on information access and fear of crime. Even with the advent of electronic media and digital news, older adults prefer traditional modes of accessing information (Bachmann, Kaufhold, Lewis, & de Zuniga, 2010). For example, according to national survey data, among persons ages 65 and older who consume news, 73 percent obtain it from television, 27 percent from radio, and 48 percent read print news (Pew Research Center, 2012). The percentages for individuals ages 18 to 24 are as follows: 29 percent (television), 20 percent (radio), and 6 percent (print news). Older citizens ages 65 and above are less likely to rely on electronic media for information. Only 23 percent use digital or online sources to obtain information, 12 percent use email, and 2 percent use social networking sites or applications. For young people ages 18 to 24, the percentages are higher: 41 percent use online sources, 13 percent use webmail, and 34 percent use social networking sites. Age is related not just with media consumption but also with fear of crime—research studies have found that older people are more fearful of crime and of victimization (Ferraro & La Grange, 1987;

Liska & Baccaglini, 1990; Liu et al., 2009; Warr, 1984).

Race and ethnicity also are associated with media consumption and with fear of crime. For example, a study by Marketing Charts (2008)—an organization that monitors media use nationally—found that blacks (66 percent) and Hispanics (64 percent) were more likely to watch television information sources on a regular basis as compared to Asians (53 percent) and whites (51 percent). Analysis of data from the Health Information National Trends Survey, indicates that 57 percent of blacks, 29 percent of Hispanics, and 75 percent of whites access information using the internet (Chou, Hunt, Beckjord, Moser, & Hesse, 2009). These divides have been documented in descriptive accounts and in scholarly research on media consumption (DeLorme, Huh, & Reid, 2010; Hoffman & Novak, 1998; Hoffman, Novak, & Schlosser, 2001; Korgen, Odell, & Schumacher, 2001). Racial and ethnic divides also surface in research on the fear of crime. Studies indicate that racial and ethnic minorities tend to be more fearful of crime, though findings across studies are not always consistent (Callanan, 2012; Gibson, Zhao, Lovrich, & Gaffney, 2002; Liu et al., 2009; Scarborough, Like-Haislip, Novak, Lucas, & Alarid, 2010).

Education, too, is associated with media consumption and fear of crime. For example, studies find that individuals with more education are more likely to access the internet and use electronic media (Ahn, 2011; Pew Research Center, 2012; Warschauer & Matuchniak, 2010). They fear crime less, too (Scarborough et al., 2010; Welch, Payne, Chiricos, & Gertz, 2011).

Other factors may be linked to media consumption and potentially to willingness or interest in seeking out information on ways to reduce the risk of consumer fraud victimization. For example, difficulty managing finances has been shown to be linked to impulsivity and a discounting of potential harms as well as to potential cognitive impairments (Hamilton & Potenza, 2012; Widera, Steenpass, Marson, & Sudore, 2011). Individuals who have trouble managing finances may be less likely to seek information or assistance that could protect them against consumer fraud. Some empirical studies indirectly lend credence to this idea. Reisig, Pratt, and Holtfreter (2009), for example, found that financially impulsive people are less likely to modify their behavior to reduce their chances of being victimized through online theft.

Remote purchasing, too, may be linked to information access and is of particular relevance given an era in which such purchasing has become more common and the risk of financial fraud associated with online purchases (Miyazaki & Fernandez, 2001). In particular, the same individuals who are more likely to purchase goods through an online forum also may be more likely to be exposed to or targeted for financial scams. And it is possible that the same individuals who engage in more online purchasing also may be more risk-embracing (Reisig et al., 2009). They therefore may be less likely to seek out such information or to contact programs that educate individuals about consumer fraud and steps that they can take to protect themselves (see also Bhatnagar, Misra, & Rao, 2000; Cheshire, Antin, & Churchill, 2010).

Media Access and Elder Fraud Prevention Program Awareness and Contact

Despite scholarship that has advanced understanding of consumer fraud victimization among the elderly, there remains a critical need to understand better how victimization can be prevented (Bonnie & Wallace, 2003; Daly et al., 2011; Reynolds, 2013). A mainstay of prevention efforts consists of the use of information campaigns to educate the elderly about types of consumer and financial fraud and how to reduce the risk of victimization. Yet, the effectiveness of such efforts is unclear and fundamental questions exist about the extent to which the elderly acquire information about fraud prevention, the types of media that the elderly are most likely to use in acquiring such information, and, of central importance for prevention programs, the extent to which media access is associated with awareness of the programs and contacting them.

A focus on program effectiveness is important and so, too, is assessment of program theory (Reisig & Holtfreter, 2013). However, a logical first step before assessing impact consists of identifying the extent to which program target populations access fraud prevention information from various media and the extent to which members of this population are aware of the program and, in turn, contact it. Without such awareness or contact, the target population clearly cannot be provided the information that programs seek to distribute, in turn reducing if not eliminating

the possibility of program effectiveness. Accordingly, this study seeks to develop a more informed understanding of the role information access plays in promoting awareness of crime prevention and in increasing crime prevention program awareness and contact.

A focus on media access complements but also is distinct from efforts to understand fraud victimization risk. Some accounts intimate that a risk-based approach can be used to guide education efforts. The Federal Trade Commission (FTC), in its study of fraud, for example, emphasized that risk assessment would “permit the Commission to target education campaigns and law enforcement initiatives more precisely towards particular consumer groups who are most at risk of falling victim to fraud” (Anderson, 2004, p. 5). Yet, for any such effort to be effective, information dissemination efforts must rely on media that different groups, including those most at-risk of victimization, most likely use (cf. Webster & Ksiazek, 2012). Put differently, targeting groups at risk of victimization is not the same thing as disseminating information in ways that are most likely to reach such groups. In addition, it is likely that efforts to educate the elderly and to provide support services or assistance will be more effective when they rely on a diverse range of media, rather than relying on one or two types, to distribute information (Lefebvre, 2013).

METHODS

This study sought to investigate several questions. First, which groups among the elderly are most likely to access more, and various types of, information about fraud crime prevention? Second, does information access predict the likelihood that the elderly will be aware of consumer fraud prevention programs or that they will contact them? To answer these questions, the study used survey data from individuals 60 years and older residing in Arizona and Florida. Approval to conduct the study was obtained from both the Arizona State University Institutional Review Board and the Florida State University Institutional Review Board prior to data collection.

These states were selected for two reasons: both states had senior populations that exceed the national average and both had crime prevention programs in place for seniors. For the study,

Arizona participants were queried about Area Agencies on Aging (AAA). Operated under the auspices of the Division of Aging and Adult Services, this non-profit program consisted of eight satellite offices located throughout the state (including the Navajo Reservation) that were staffed by volunteers. One of the AAA's central efforts involved the dissemination of information to seniors about fraud. Seniors also could report scams directly to the AAA. Respondents in Florida were asked about the Seniors vs. Crime program. Established by the Office of the Attorney General, this non-profit program also was staffed primarily by volunteers who operated offices in all 67 counties. Their efforts focused on several areas, including educating seniors about consumer fraud and providing victim assistance (e.g., referrals to law enforcement). Understanding what factors promote program awareness among seniors in these two states and whether that awareness translated into actual contact with these programs provides a unique opportunity to shed light on these types of crime prevention efforts.

Data and Sample

Survey data from 2,000 telephone interviews conducted over a one-month period in the summer of 2011 were collected. Participants were 60 years of age and older. A well-established, reputable private research firm conducted the interviews and a list-assisted method was used to construct the sample. Specifically, telephone numbers from a database of directory-listed households were randomly selected. Next, random digit dialing was used to call numbers in the sampling frame during times and day when potential respondents were more likely to be available. A ten call-back rule was used before replacing records of unknown eligibility (e.g., answering machines, busy signals, and no answer). If more than two people aged 60 or over resided in a household, interviewers asked to speak to the person with the "next birthday." Telephone interviewers received training on how to administer the instrument and were closely monitored by supervisors who walked the call center and listened in on interviews. When necessary, the survey was conducted in Spanish. On average, interviews lasted 21 minutes.

In all, 4,130 potential respondents were invited to participate. Callahan, Unverzagt, Hui, Perkins, and Hendrie's (2002) six-item screening instrument was used to identify and screen individuals with cognitive impairment (e.g., Alzheimer's disease and vascular dementia). The instrument can be administered in less than a minute and has been shown to be reliable in community-based samples (Woodford & George, 2007). Individuals who were not able to complete the survey at first were contacted at a later date. Supervisors trained interviewers and monitored calls. Such steps served to improve response rates and data quality.

For those who started the interview, the completion rate was 82.9%. Interviews with 2,000 people were completed (1,000 respondents from each state). The overall response rate was 48.4%. Cases of unknown eligibility and known ineligibility (e.g., disconnected numbers and individuals suffering cognitive impairment) were not included in this calculation (American Association for Public Opinion Research, 2011). The response rate exceeded recently reported national averages (Pew Research Center, 2012). Nonetheless, results of the study should be interpreted with caution given that they may not generalize fully to the elderly population. In addition, as noted in the conclusion, the sample does not generalize to the elderly in nursing homes or hospitals or to those who have no listed phone number. Missing case values, which were present in less than 1% of cells in the data file, were replaced using similar response pattern imputation. This procedure is available in PRELIS version 2.30 (Jöreskog & Sörbom, 1996). Prior research has shown that this imputation method is effective and reliable (Gmel, 2001).

When compared to the 2010 census, the Florida and Arizona samples were representative of the elderly population with respect to key demographic characteristics (e.g., age, marital status, race, and employment status). The Arizona sample had a higher proportion of high school grades and Hispanics were underrepresented in each sample. However, the differences from the 2010 census were modest. Analyses revealed that the multivariate effects, discussed below, were invariant across samples; accordingly, the interview data from both states were pooled.

The combined sample included 63.7% women and 36.4% men between the ages of 60 and 99 years (mean = 72.42, SD = 8.09). The breakdown for racial background was as follows: 93.3%

White, 3.6% Black, 1.5% American Indian, 0.5 Asian American, 0.2 Pacific Islander, and 1.0% self-identified as “other.” Just over 3 percent (3.2%) of respondents were Hispanic. A majority (58%) were married, 22.6% widowed, 15.9% divorced or separated, and a small percentage (3.5%) had never been married. Eleven percent did not graduate from high school, 17.6% were high school graduates (includes equivalency), 31.1% reported some college, 27.2% were college graduates, and 13.1% had a graduate or professional degree. Approximately 33% of respondents reported that they lived alone, while 1.7% resided in an assisted living community. Only a small minority (10.3%) reported living with their children. The vast majority of participants were retired (73.3%) and rated their health as either “good” or “excellent” (78.6%).

Measures

Participants were asked which media sources provided “information about how to protect yourself against consumer fraud” during the year leading up to the study. The percentages of respondents in the full sample indicating they had received information from specific media were as follows: 24.4% website, 16.2% email, 48.1% television, 14.2% radio, 25.6% magazine, 15.6% brochure/flier, and 19.7% “other” (e.g., newspaper). This study seeks to understand how information access varies across individuals, with respect both to social groupings and to lifestyle factors. Accordingly, each of the seven source items were dummy coded (1 = yes, 0 = no) and used as criterion variables in multivariate analyses. These items were also summed to create a seven-point variety index (Sweeten, 2012), where respondents who indicated that they had not received fraud prevention information from any source were coded as 0, and those who reported gleaning information from every source (including “other”) were coded as 7. This variable, information access, will be used as both a dependent variable and an independent variable. The latter focuses on whether information access characterized by a greater variety of media sources is associated with participants’ knowledge of existing programs designed to help prevent consumer fraud and whether they make contact with such programs.

Program awareness was a single-item measure. Respondents self-reported their familiarity with a specific program (i.e., Arizona’s Area Agencies on Aging and Florida’s Senior vs. Crime Program) designed, among other things, to educate seniors about the risk of consumer fraud and to provide resources for victims who had been scammed. A three-point, closed-end response set was used, ranging from “not familiar” (78.1%), “somewhat familiar” (18.5%), and “very familiar” (3.5%). Because of the significant skew observed in the distribution of scores (skew = 1.89, s.e. = 0.06) and attempts to normalize the skew failed, the item was binary coded (1 = very/somewhat familiar, 0 = not familiar). Program contact reflected whether those individuals who were either very or somewhat familiar with the programs in their respective states actually made contact with the program in the past year (1 = yes, 0 = no).

Five demographic variables were included, based on prior research, in the multivariate analyses to reduce bias in estimates that might arise from omitting important variables. Age was measured in years, and education used an ordinal scale (ranging from 1 = did not graduate from high school to 5 = graduate or professional degree). Male was dummy coded (1 = male, 0 = female). And, finally, Hispanic (1 = yes, 0 = otherwise) and racial minority (1 = yes, 0 = otherwise) were included; non-Hispanic whites served as the reference category.

Three consumer lifestyle measures were included in the information access analysis. Doing so was necessary given that demographic characteristics do not fully capture variation in information access variety. Remote purchasing, which was a 5-item variety index, reflected the number of modes of remote purchasing (i.e., telemarketing, online, infomercial, mail-order, and email-order) participants had used in the past year. It was hypothesized that respondents who purchased goods and service through a greater number of remote outlets also accessed consumer-related information (e.g., fraud prevention) via a larger number of sources. Internet user was a dummy coded variable that reflected whether respondents ever went online to access the Internet (1 = yes, 0 = no). It was expected that Internet users would report that they received fraud prevention information from more sources relative to those who did not (or could not) access the Internet. Finally, trouble managing money was a self-report measure reflecting how much

difficulty respondents reported having taking care of their personal finances (0 = no difficulty to 3 = unable to manage money). It was hypothesized that individuals with greater difficulty managing their finances would be low information seekers in efforts to avoid consumer scams.

Analytic Approach

The multivariate analyses proceeded in two steps. First, the two information access measures (both the variety index and source-specific items) were regressed onto the demographic and consumer lifestyle variables. Because the information access index is a count variable with a score distribution that shows signs of overdispersion (mean = 1.63, variance = 2.42), negative binomial regression was used. Separately, each specific information source (e.g., radio and television) was regressed onto the 8-variable model using logistic regression. Finally, the effect of information access on both program awareness and program contact was tested. Awareness is a necessary condition of making contact with a program. Therefore, to avoid conflating these two variables, the contact analyses focused on those who reported some level of awareness. However, this approach involved analysis of a nonrandom subsample, which can result in sample selection bias (Berk, 1983). To address this potential issue, a two-stage probit regression model (using the Stata Heckprob procedure) was estimated. This procedure requires that “exclusionary restrictions” are included in the first-stage (or selection) equation. These variables are expected to be correlated with the selection variable, but not related to the final outcome (Bushway, Johnson, & Slocum, 2007). Two variables were classified as exclusionary restrictions in the current study: religious services (“Went to church, temple, or another place of worship for services or other activities”) and entertainment away from home (“Went to a movie, restaurant, club meeting, or other group event?”). Both items used the “past year” as a reference point and feature a closed-ended response set, where 1 = never and 4 = frequently. They were correlated with program awareness at the 0.01 level. However, neither item was related to program contact ($p > 0.25$). The multivariate models featured below were estimated using Stata 12. Descriptive

statistics for the variables using in this study are presented in Table 1.

Insert table 1 about here

RESULTS

Information Access Multivariate Analyses

A series of diagnostics were performed to ensure that the observed parameter estimates were unbiased. Pearson's r coefficients showed that none of the relationships between the independent variables exceed an absolute value of 0.70. The two strongest correlations both involved Internet user (age, $r = -0.36$, $p < 0.01$; remote purchasing, $r = 0.36$, $p < 0.01$). In sum, none of the bivariate relationships indicated harmful levels of collinearity. This conclusion is reinforced by the variance inflation factors (VIF), none of which exceeded 2 (mean VIF = 1.11). However, the Beusch-Pagan/Cook-Weisberg test detected unequal errors variances ($\chi^2 = 145.92$, $p < 0.01$). To account for heteroskedasticity, robust standard errors were estimated.

The multivariate analyses begin with a negative binomial model in which the information access variety index was regressed on demographic characteristics and consumer lifestyle factors. The model is featured on the left-hand side of table 2. The likelihood-ratio test of alpha (not shown in table) confirmed suspicions that the distribution of scores was overdispersed ($\chi^2 = 91.05$, $p < 0.01$), and the Wald χ^2 (147.21, $p < 0.01$) indicated that one or more of the estimated coefficients were greater than zero. In short, the model fit the data well. Turning to the regression estimates, the test statistics indicated that four variables achieved statistical significance. Specifically, senior citizens with higher levels of formal education reported receiving information on preventing consumer fraud from more sources relative to less educated respondents. As expected, participants who reported having trouble managing their money appeared to be low information seekers when it came to avoiding consumer scams. Internet users and individuals who bought goods and services via remote purchasing, in contrast, received information on how to protect themselves from consumer fraud from a greater number of

sources. The general finding is that information access varied across respondent characteristics.

Insert table 2 about here

The remaining models in table 2 consist of logistic regression analyses that investigated the connection between respondent characteristics and specific media sources. For example, the exponentiated coefficient for males indicates that the odds of receiving information about preventing consumer fraud from listening to the radio were 44% higher when compared to females ($b = .367$, odds ratio = 1.44). Similarly, for males, the odds of retrieving information from a website were 1.55 times larger than the odds for females ($b = .436$, odds ratio = 1.55). Blacks were less likely than non-Hispanic whites to access such information via e-mail. By contrast, the odds of Hispanics obtaining it from a website were 66% lower than the odds for non-Hispanic whites ($b = -1.087$, odds ratio = .34). Educated elderly respondents were more likely to access prevention information from brochures, magazines, and the radio, but not from the other types of media. Individuals who had trouble managing money were less likely to access such information from magazines or television. Not surprisingly, in comparison to their counterparts, Internet users and remote shoppers in the sample reported receiving consumer fraud prevention information from a broader array of sources (e.g., brochure, radio, email, and websites). These individuals tended to be younger—members of a group referred to as the “young-old” by gerontologists (Garfein & Herzog, 1995)—male, highly educated, and white.

Program Awareness and Contact Multivariate Analyses

Attention now shifts to whether information access translates into awareness of and contact with programs whose mission it is to prevent consumer fraud among the elderly and to provide assistance to those who are victimized. Recall that the two-stage probit model, shown in table 3, was used because of concerns about potential sample selection bias. The results from the selection, or stage 1, equation—presented as the “program awareness” model—shows that information access influenced program awareness. Put differently, elderly participants who

gleaned fraud prevention information from a greater number of sources on average had a higher probability of being aware of the fraud prevention and assistance program in their state. As discussed in the conclusion, this finding highlights the central role that distribution of program information through diverse media may hold for raising awareness about a given program.

In addition to this finding, the results indicate that two demographic variables (i.e., age and sex) achieved statistical significance. Specifically, older participants and women had a higher probability of program awareness. Similarly, the two exclusionary restrictions were significant at the 0.05 level. Taken together, this second set of results indicates that awareness is not simply a product of media transmission, but also a more informal diffusion process that may take place through social networks or other processes.

Interestingly, the Wald test of independent equations was not statistically significant ($\chi^2 = 1.10$, $p = 0.30$), indicating that sample selection was not a detectable source of bias. Nevertheless, the two-stage probit procedure was used here because it is a straightforward modeling procedure that produces efficient regression estimates. Indeed, the Wald test indicated that the two-stage model possessed significant explanatory power ($\chi^2 = 20.36$, $p < 0.01$).

Insert table 3 about here

The focus turns, finally, to the question of whether information access is associated with program contact. Inspection of the results from the outcome, or stage 2, equation—presented as the “program contact” model—shows that it is. Specifically, the z-test statistic for information access supports the hypothesis that individuals in the sample who obtained fraud prevention information from a greater number of sources had a higher probability of contacting the programs designed to provide prevention information and victimization assistance. Once again, age and gender effects were observed: the probability of program contact was higher for older and female study participants. In short, the results from the two-stage probit model highlight the significance of information access, and of age and gender, for program awareness and contact.

Robustness Checks

The effects of other variables were also tested in the information access, program awareness, and program contact analyses. These were selected based on prior research and comprehensive reviews (e.g., Anderson, 2013; Bonnie & Wallace, 2003; Daly et al., 2011). For example, Alves and Wilson (2010) have identified social isolation as a factor that can make older adults vulnerable to victimization. Other variables suggested by previous studies, such as social support, trust propensity, loneliness, cognitive functioning, binge drinking, marriage quality, and employment status were investigated in ancillary analyses. The salience of such measures is unclear given that prior research has focused primarily on risk factors for victimization, not those related to our focus of interest—that is, fraud prevention information access and prevention program awareness and contact. These variables either were not related to the outcomes of interest or demonstrated no consistent pattern of significance. In addition, their inclusion or exclusion did not alter the main findings from tables 2 and 3.

We also investigated whether victimization access and program contact might be predicted by prior fraud victimization experiences. The logic is that being the victim of fraud might motivate individuals to seek out information and assistance to prevent future victimization. There was, however, no statistically significant association between victimization and information access or program contact. Separately, we investigated whether lifetime fraud targeting experiences predicted the outcomes. Here, again, there was no evidence of a statistically significant relationship. Notably, however, when we investigated past-year fraud targeting, there was a positive and statistically significant relationship between targeting and information access ($b = .127$, odds ratio = 1.14, $p < .01$) but not between past-year targeting and program contact. In general, then, there is little evidence that either fraud targeting or victimization experiences contribute to individuals seeking information about prevention or to these individuals contacting fraud prevention programs. The substantive and statistical significance of other variables under these different model specifications remained the same.

Given these results and to ensure parsimony in the models, which was especially important in the contact models because of the relatively small number of cases and the low base rate of individuals contacting programs, we omitted victimization and targeting from the final models.

CONCLUSION

The elderly constitute a potentially more vulnerable population at risk of consumer and financial fraud victimization, with some estimates indicating that such victimization results in several billion dollars in losses each year (Anderson, 2013; Reisig & Holtfreter, 2013). For this reason, and because of concerns about fraud underreporting, states have undertaken a wide variety of program initiatives to educate the elderly about consumer and financial fraud and steps that can be taken to prevent or reduce its likelihood (Fitzpatrick & Hamill, 2010; Government Accountability Office, 2012; Reeves & Wysong, 2010). Even so, the effectiveness of these initiatives remains largely unknown (Daly et al., 2011; Johnson, 2003; Hafemeister, 2003). And, critically, little is known about the extent to which the elderly learn about these efforts through the various media dissemination strategies typically used by the programs.

The research gap on the elderly and their use of media to learn about and contact fraud prevention programs warrants attention for a simple but critical reason. The effectiveness of the programs—as with any information dissemination effort (Rossi, Lipsey, & Freeman, 2004)—ultimately rests on consumer awareness and program contact. To date, research indicates that program efforts guided by opportunity theory may reduce the likelihood of victimization (Reisig & Holtfreter, 2013). Similarly, efforts that target at-risk elderly groups may be effective (Anderson, 2004). Yet, any such effectiveness requires that the targeted populations access information through different types of media and, in turn, that media consumption contributes to program awareness and contact.

To address this gap in research, the present study drew on scholarship on consumer fraud among the elderly, media consumption, and fear of crime to identify factors that might pattern

information access and program contact among the elderly. Analysis of telephone survey data from 2,000 adults aged 60 and over in Arizona and Florida pointed to several patterns. First, among the elderly, those most likely to access a more diverse range of information sources on consumer fraud prevention include individuals who were more educated, had little trouble managing their finances, used the Internet, and remote shopped.

The study found, too, that patterns of using specific types of media to access information about fraud prevention were shaped by a number of influences, including gender, education, race, ethnicity, ability to manage money, use of the Internet, and remote purchasing. For example, males were more likely than females to obtain consumer fraud prevention information from radio listening and the Internet. The educated were more likely to obtain such information from magazines and radio listening. Blacks were less likely than non-Hispanic whites to obtain it through e-mail while Hispanics were less likely than non-Hispanic whites to obtain it through the Internet. And difficulty managing money, Internet usage, and remote purchasing also were associated with specific types of media access.

Not least, and of central relevance to programs aimed at reducing fraud victimization through educational efforts, the study found that elderly individuals who accessed a diversity of information sources were more aware of fraud prevention programs and were more likely to contact them. In conjunction with the other findings, this result implies that program dissemination and fraud prevention education efforts are most likely to be successful with individuals who are more educated, manage their finances more effectively, use the Internet, and remote shop. Notably, ancillary analyses suggested that fraud targeting and victimization do not appear to motivate individuals to seek out information or assistance with fraud prevention. The sole exception may be prior-year fraud targeting, which was positively associated with accessing information about crime prevention but not with contacting programs for assistance.

Several implications flow from these results. First, research is needed on the effectiveness of fraud prevention programs to disseminate information to intended, or “target,” populations. The results here suggest that dissemination efforts will be more effective when they rely on a diverse

set of media for distribution information. In so doing, two benefits may arise. On the one hand, the more media in which program information surfaces, the more likely that any given individual will learn about the program and, in turn, contact it. On the other hand, some segments of the elderly population are more likely to rely on specific types of media; a strategy of disseminating information through diverse media helps to ensure that these groups also have an opportunity to learn about the program and, in turn, to contact it for educational materials or assistance.

Second, the fact that some groups rely on specific media sources more than others indicates that targeted educational efforts need to define carefully their population of interest. This implication flows directly from scholarship on media consumption but is no less important in its salience for programs. For example, the results here suggest that radio is more effective as a medium of information dissemination for males, as compared to females. Accordingly, efforts to promote awareness of a fraud prevention program in areas with greater concentrations of males would want to consider placing greater weight on radio broadcasts. Similarly, efforts to target predominantly black or Hispanic populations, would want to consider placing greater emphasis on those media on which these groups most rely, which may vary by locale. In this study, for example, Hispanics were less likely than whites to obtain fraud prevention information via the Internet; thus, a program serving a predominantly Hispanic population would want to consider emphasizing other media for information dissemination efforts. At the same time, it may be that such differences do not exist in other states. It remains the case nonetheless that distributing information through diverse media outlets likely constitutes the most effective approach to informing elderly citizens about steps that they can take to prevent consumer fraud victimization and about programs that exist that can provide assistance or services to them.

Third, and extending this last observation, results from this study should be replicated in other states. It may be that the relationship between specific types of media access and fraud prevention awareness or program contact varies. Until such research is conducted, the central conclusion that remains is that fraud prevention programs will want to examine carefully the media usage activities of the populations that they serve and adjust their educational materials

and the media through which they distribute them accordingly.

Fourth, the study's findings point to other lines of investigation that warrant investigation. This study did not represent individuals living in nursing homes or hospitals or those who had unlisted phone numbers. Accordingly, the results may not generalize to these groups; nursing home residents, for example, may have higher victimization risks given their, on average, reduced cognitive capacity. This issue will be important for future studies to address because victimization may vary among them (Anderson, 2004, 2013; Bonnie & Wallace, 2003; Payne & Strasser, 2012), and so, too, may media consumption. Similarly, elderly who reside in rural areas may rely more on some media than others (Mukherjee, 2013). Family and friendship networks, too, may serve to increase access to some types of media, such as e-mail as a means of relaying information about specific web sites or articles, than others. For each group, living situation, and context, greater information is needed about the effectiveness of specific types of media for communicating information about consumer fraud prevention steps that the elderly can take and about programs that aim to provide fraud prevention education or to provide assistance.

Fifth, although the findings here point to the importance of relying on diverse media to communicate to the elderly about consumer and financial fraud prevention steps that they can take and resources that they can access, it remains unclear whether such information or access indeed can reduce victimization. Strong theoretical grounds exist to anticipate benefits of educational programs aimed at fraud prevention. Opportunity theory, in particular, grounds many educational efforts and dimensions of the theory have been shown to be related to victimization (Reisig & Holtfreter, 2013). However, whether educational efforts indeed lead to lifestyle changes among the most at-risk segments of the elderly population that reduce opportunities for victimization, and whether these changes reduce victimization, remains to be assessed. At the same time, the theoretical underpinnings of media and program assistance models need to be carefully developed and evaluated empirically. Given the aging of the American population, the time is none too soon to begin undertaking such work.

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TABLE 1. VARIABLES AND DESCRIPTIVE STATISTICS

	Mean or %	SD	Minimum	Maximum	N
Full sample					
Information access	1.63	1.56	0.00	7.00	1993
Program awareness	22%	---	0.00	1.00	1997
Age	72.42	8.09	60.00	99.00	1984
Male	36%	---	0.00	1.00	2000
Education	3.14	1.18	1.00	5.00	1997
Racial minority	6%	---	0.00	1.00	1992
Hispanic	3%	---	0.00	1.00	1996
Trouble managing money	0.10	0.40	0.00	3.00	1996
Internet user	72%	---	0.00	1.00	1999
Remote purchasing	0.86	0.87	0.00	5.00	1991
Aware subsample					
Program contact	7%	---	0.00	1.00	437
Information source	1.79	1.54	0.00	7.00	436
Age	73.72	8.34	60.00	99.00	433
Male	28%	---	0.00	1.00	438
Education	3.26	1.22	1.00	5.00	438
Racial minority	7%	---	0.00	1.00	433
Hispanic	3%	---	0.00	1.00	438
Religious services	3.06	1.14	1.00	4.00	435
Entertainment away from home	3.30	0.89	1.00	4.00	437

TABLE 2. INFORMATION ACCESS, BY TYPE, REGRESSED ON SELECTED PREDICTORS

Variables	Information access ^a	Brochure ^b	Magazine ^b	Radio ^b	Television ^b	Email ^b	Website ^b	Other ^b
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Age	-0.001 (0.003)	0.009 (0.008)	-0.007 (0.007)	-0.003 (0.009)	-0.011 (0.006)	0.010 (0.008)	-0.013 (0.008)	0.018* (0.007)
Male	-0.008 (0.044)	-0.088 (0.133)	-0.004 (0.109)	0.367** (0.134)	-0.183 (0.096)	-0.051 (0.132)	0.436** (0.114)	-0.455** (0.125)
Education	0.059** (0.019)	0.131* (0.057)	0.130** (0.048)	0.171** (0.062)	-0.021 (0.040)	0.106 (0.056)	0.089 (0.050)	0.071 (0.051)
Racial minority	-0.112 (0.081)	0.061 (0.269)	-0.395 (0.243)	0.143 (0.279)	0.082 (0.185)	-0.832* (0.371)	-0.367 (0.271)	-0.206 (0.253)
Hispanic	0.077 (0.120)	0.331 (0.346)	0.363 (0.286)	0.423 (0.349)	0.363 (0.262)	-0.567 (0.501)	-1.087* (0.504)	0.041 (0.328)
Trouble managing money	-0.140** (0.046)	-0.262 (0.184)	-0.315* (0.151)	-0.107 (0.179)	-0.241* (0.121)	-0.315 (0.246)	-0.198 (0.166)	0.073 (0.144)
Internet user	0.322** (0.053)	0.441* (0.180)	0.223 (0.142)	0.692** (0.199)	-0.217 (0.118)	1.795** (0.260)	1.726** (0.222)	0.205 (0.154)
Remote purchasing	0.105** (0.025)	0.214** (0.074)	0.068 (0.065)	0.166* (0.077)	0.014 (0.057)	0.288** (0.072)	0.317** (0.066)	0.066 (0.071)
Constant	0.042 (0.217)	-3.238** (0.645)	-1.183* (0.563)	-2.969** (0.709)	0.994* (0.492)	-4.397** (0.690)	-2.375** (0.631)	-2.965** (0.601)
	Wald χ^2	147.21**	35.22**	32.23**	61.24**	15.58*	109.76**	157.26**
	N	1964	1964	1964	1965	1964	1964	1964

Note. Entries are unstandardized partial regression coefficients (b) and robust standard errors (SE).

* $p \leq 0.05$, ** $p \leq 0.01$ (two-tailed test)

^a Negative binomial regression equation.

^b Binary logistic regression equation.

TABLE 3. PROGRAM AWARENESS AND CONTACT REGRESSED ON INFORMATION ACCESS,
USING A TWO-STAGE PROBIT MODEL

Variables	Program awareness		Program contact	
	b (SE)	z	b (SE)	z
Information access	0.050 (0.020)	2.57**	0.139 (0.046)	3.00**
Age	0.015 (0.004)	3.90**	0.024 (0.009)	2.62**
Male	-0.287 (0.070)	-4.09**	-0.702 (0.223)	-3.16**
Education	0.073 (0.029)	2.51*	0.045 (0.069)	0.66
Racial minority	0.104 (0.131)	0.80	0.324 (0.277)	1.17
Hispanic	-0.010 (0.181)	-0.06	0.332 (0.376)	0.88
Religious services	0.057 (0.027)	2.14*	---	---
Entertainment away from home	0.074 (0.037)	2.02*	---	---
Constant	-2.537 (0.352)	-7.22**	-4.191 (0.727)	-5.77**
	Wald χ^2		20.36**	
	N	1964		428

Note. Entries are unstandardized partial regression coefficients (b), robust standard errors (SE), and z-tests.

* $p \leq 0.05$, ** $p \leq 0.01$ (two-tailed test)