Published in final edited form as:

Am J Health Promot. 2014 ; 28(4): 239–241. doi:10.4278/ajhp.120921-ARB-459.

Trust in Health Information Sources Differs Between Young/ Middle and Oldest Old

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Abstract

Purpose—Examine differences in trust of health information sources between the oldest old and young/middle old.

Design—Cross-sectional survey using convenience sampling.

Setting—Eleven retirement communities.

Subjects—Older adults 65 years (N = 353).

Measures—Self-rated trust in health information sources.

Analysis—Mann-Whitney *U*-test or Fisher exact test to compare trust between age groups; multinomial ordered logistic regression analyses to model trust in Internet information sources.

Results—The overall survey response rate was 26.6%. Differences in trust were identified between oldest old (n = 108) and young/middle old (n = 245) for pharmacist ($p < .05$), Internet ($p < .001$), television ($p < .05$), radio ($p < .001$), and newspaper ($p < .05$) sources. In the oldest old, we found associations between levels of trust in Internet sources and frequency of Internet use ($\beta = 4.13, p < .001$).

Conclusion—Understanding where differences in trust arise can inform the design of resources to support the information-seeking process. When planning widespread distribution of health information to these distinct groups, program developers need to consider these differences.

Keywords

Aged; Information Seeking Behavior; Health Promotion; Prevention Research; Manuscript format: research; Research purpose: descriptive, instrument development; Study design: nonexperimental; Outcome measure: cognitive, behavioral; Setting: local community, clinical health care; Health focus: intellectual health, medical self-care, social health; Strategy: education, culture change, behavior change; Target population: seniors; Target population circumstances: education/income level, race/ethnicity

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PURPOSE

The oldest old (OO), persons 85 years or older, represent the most rapidly growing demographic group in the United States.¹ This article examines trust of different health information (HI) sources in the OO and compares it with that in the young/middle old (Y/MO) population, i.e., those aged 65 to 84 years. It also examines different factors contributing to trust in HI sources, including frequency of Internet and television use, along with perceived effort to acquire and understand HI. This work informs the design of interventions that will assist the OO in attaining useful HI and making more informed health decisions, while recognizing that their unique needs and information-seeking behaviors may differ from those of their younger counterparts.

METHODS

Design and Sample

From a parent study, an anonymous cross-sectional paper-and-pencil survey of HI-seeking behavior was developed by examining which sources community-dwelling older adults most frequently use for HI, how reliable they find such sources, and the level of difficulty they experience with the information search process. The survey was distributed to 1520 adults from 11 senior housing communities. Of this number, 403 completed surveys were returned (26.6% response rate). This was a secondary analysis of data provided by respondents older than 65 years ($n = 353$).

Measures

Demographic variables assessed were age, gender, race, marital status, and education level. The survey included questions from the Health Information National Trends Survey (HINTS) and Krantz Health Opinion Survey (KHOS). The KHOS has a Kuder-Richardson 20 reliability of .74 and has been found to have discriminant validity against the Health Locus of Control Scale.² The HINTS survey was developed from an underlying conceptual framework and underwent rigorous pretesting and expert review to establish reliability and validity.³ All items, except the agree/disagree KHOS questions, were scored on a four-point Likert scale, higher scores indicating greater agreement. The survey questions asked participants to rate perceived financial adequacy, frequency of access to television and Internet, difficulty and frustration in attaining HI, and trust of different HI sources (health

care providers, pharmacists, friends/relatives, Internet, television, radio, newspapers, and retirement community staff). Participant's health locus of control was assessed through the seven-item KHOS information subscale questionnaire. After checking Cronbach α for internal consistency, the economic questions ($\alpha = .939$; score range = 3–12), information search questions ($\alpha = .871$; score range = 4–16), and KHOS questions ($\alpha = .762$; score range = 0–7) were summed to obtain aggregate scores.

Procedure

Depending on facility preferences, survey distribution methods included (1) mailbox distribution or (2) presentation followed by direct distribution to each participant. Participation was voluntary and we provided 2 to 3 weeks before collecting surveys. The university's Institutional Review Board approved all study components.

Analysis

Statistical analyses were performed by using R Statistical Software (version 2.12.1; R Foundation for Statistical Computing). Respondents were categorized into the OO and Y/MO groups. Demographic characteristics were compared between age groups by using Mann-Whitney *U*-test or Fisher exact test as appropriate.

The Friedman test assessed differences in distribution of trust across groups of information sources for the OO. This was followed by post hoc analysis of information sources, using the Wilcoxon-Nemenyi-McDonald-Thompson technique.⁴ A topologic sort was applied on the relations identified in post hoc tests to generate a rank ordering of information sources based on level of trust.

Mann-Whitney *U*-tests compared rated trust of information sources between age groups. Multinomial ordered logistic regression modeled dependent variable of trust in Internet information source, and independent variable of Internet access controlled for covariates of sex, marital status, education, economic score, television access, information search score, and KHOS score.

RESULTS

Average age of respondents was 89.5 years (SD: 3.76 years) for OO and 74.7 years (SD: 6.07 years) for Y/MO. Compared to the Y/MO, the OO were more likely to be white (OO: 96.3%; Y/MO: 83.3%), widowed (OO: 65.7%; Y/MO: 33.9%), and facing economic difficulties (OO: 8.7; Y/MO: 6.7). In addition, the OO accessed Internet computer (mean = 2.0, SD = 1.2) less frequently than the Y/MO (mean = 2.7, SD = 1.3). The OO were also less inclined to proactively seek HI as measured by the KHOS score (mean = 3.3, SD = 2.1) than their younger counterparts (mean = 4.8, SD = 2.0). No differences in gender, education, frequency of access to television, and perceived difficulty of information search were found across the two age groups.

The OO placed increasing levels of trust in different HI sources, ranked as follows: (Internet, radio, television) < (newspaper) < (friends/relatives, retirement community staff) < (health care providers, pharmacists). The OO had a lower level of trust than the Y/MO for

Internet ($p < .001$), television ($p < .05$), and radio sources ($p < .001$), while they rated pharmacists ($p < .05$) and newspapers ($p < .05$) with greater trust (see Table).

An association ($p < .001$) between access to computer with Internet and trust in Internet health sources was found, adjusting for covariates. For every one-unit increase in frequency of Internet computer access, an individual had a 4.13 times greater odds (95% confidence interval: 2.02–8.44) of having a higher level of trust in the Internet, all other covariates being constant. The aforementioned other covariates were unrelated to trust in Internet sources.

DISCUSSION

For the OO, Internet, radio, and television are on the lowest tier of trust. Often, participants are not able to actively engage with these information sources, nor are they able to ask questions for clarification. These sources can also vary in accreditation, making it difficult to assess their validity for critical matters of HI. Research examining trust and perceived value of Internet sources cites challenges in comprehension of HI and usability of Internet sources as potential detractors towards increased trust.⁵ These results highlight the need to better design Internet HI tailored towards the OO population.

Of the eight information sources, Internet, television, and radio were rated lower by the OO than by the Y/MO, while pharmacists and newspapers were rated higher (see Table). There is greater variability in trust for Internet, television, and radio sources possibly because these information sources are highly diverse, ranging in quality and content. The OO represent a distinct group from the Y/MO population; understanding where differences in trust for HI arise can better inform our design of HI systems and resources to support the information-seeking process.

Frequency of access to Internet was a strong predictor of trust in Internet as a HI source for both the OO and Y/MO. However, this association may also be confounded by difficulties accessing information through the Internet owing to age-related changes (such as vision changes, arthritis). Work by Czaja et al⁶ indicates that the source of Internet HI and the design features of a Web site also impact user's perceptions of trust. It is important to maximize the utility of the Internet for older adults given the continuously growing Internet adoption by this population group and the breadth of information available online. This work highlights the need for usability and for ways to assist older adults to navigate online and be able to assess trustworthiness of sources when seeking out HI. This has implications for system designers who need to address needs, expectations, and potential functional limitations of older adult users.

Limitations

The surveys were limited to a geographic region and convenience sampling; generalizations from our results should be made with caution. Participants returned the surveys at a 26.6% response rate, comparable to that found in other similar studies.^{7,8} Yet, the low response rate raises concerns about potential nonresponse bias.

Acknowledgments

This research is supported by a grant from the National Library of Medicine (2T15LM007442-11).

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SO WHAT? Implications for Health Promotion Practitioners and Researchers

What is already known on this topic?

Although health information (HI)–seeking behavior is a well-studied area of work, there has been limited research addressing issues of trust in information sources for the oldest old (OO).

What does this article add?

The OO expressed less overall trust for information channels that are indirect, such as Internet, television, or radio.

What are the implications for health promotion practice or research?

Designers must be aware of trust differences when using various mediums for widespread distribution of HI and should focus on reducing the effort to acquire and comprehend HI. The OO present unique challenges for designing HI systems; our results shed light on perceived trust of HI across different delivery modes.

Table

Distribution of Responses to Trust in Information Sources[†]

Trust in Information Source, %					
	Not at All	A Little	Some	A Lot	Missing
HCP					
Young/middle old	0.4	5.3	33.1	55.5	5.7
Oldest old	0.0	2.8	28.7	64.8	3.7
Pharmacist (<i>p</i> < .05)					
Young/middle old	0.8	6.5	38.4	49.0	5.3
Oldest old	0.9	8.3	35.2	50.0	5.6
Friends and relatives					
Older adults	3.7	26.5	41.2	22.0	6.5
Oldest old	6.5	30.6	36.1	22.2	4.6
Internet (<i>p</i> < .001)					
Young/middle old	22.9	22.4	38.0	6.1	10.6
Oldest old	39.8	18.5	16.7	3.7	21.3
Television (<i>p</i> < .05)					
Young/middle old	20.4	38.8	29.0	7.8	4.1
Oldest old	37.0	26.9	26.9	4.6	4.6
Radio (<i>p</i> < .001)					
Young/middle old	29.4	34.3	22.0	4.1	10.2
Oldest old	50.9	23.1	14.8	0.0	11.1
Newspaper (<i>p</i> < .05)					
Young/middle old	22.9	33.9	31.0	7.3	4.9
Oldest old	20.4	37.0	28.7	7.4	6.5
Retirement community					
Young/middle old	11.8	29.0	39.2	13.5	6.5
Oldest old	9.3	23.1	42.6	17.6	7.4

[†] Comparisons of distributions were made across age groups by using Mann-Whitney U -tests with different significance levels (sample size $n = 353$). HCP refers to health care provider.

* $p < .05$.

** $p < .01$.

.100) > *p*
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