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Original Research Article

Trust and Health Information Seeking Behavior: Results from the 2012 Health Information National Trends Survey

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ABSTRACT

Objective: To improve the policy makers for organizing and representing health information more effective, the present study is to first examine the trustworthy media information (internet, radio, television, and newspapers or magazines). We further investigate the demographic factors associated with health information overload.
Methods: Data from the 2012 Health Information National Trends Survey (HINTS) with n= 3,586was analyzed. A descriptive statistics was performed to evaluate the credibility of a variety of media sources (internet, radio, television, and newspapers or magazines). In addition, a Chi-squared test of independence was performed to compare the demographic characteristics of health information overload and non-health information overload.
Results: Internet was found to be the most credibility of media source compared with others. Age was found to be significantly associated with overload in the media sources of radio, television, and newspapers or magazines. Gender is a significant factor associated with overload in the sources of internet and newspapers or magazines. Race is significant variables associated with overload in radio and internet. Education level and income are found to be significantly related with information overload in internet, radio, and newspapers or magazines. However, marital status is shown insignificantly associated with overload along with all media sources.
Conclusions: An important finding of this analysis is the significant factors of health information overload appear in different media sources. In view of these findings, policy makers could provide an effective way to deliver health information in the variety of media sources.
Keywords: credibility, media sources, health information overload

INTRODUCTION

The dependence on a variety of media sources (e.g., internet, television, radio and print) by individuals seeking health information increases the likelihood that judging the value and trustworthiness of the source material will become more difficult. The definition of the health information seeking is searching and receiving messages that help "to reduce uncertainty regarding health status" and "construct a social and personal (cognitive) sense of health". [(1)] According to the Pew

Internet & American Life Project, there are 80% of internet users look for health information online. [(2)] The majority of people are interested to look for the health information in newspapers and magazines, or on radio and television. [(3)] Due to diverse health information flows into the general public, individuals have a difficult time to trust and understand the information. In 2012, about 27.4% of the U.S. adults believed that "Based on your most recent search for information about health and medical topics, how much do you agree or disagree: The information you found was hard to understand" from Health Information National Trends.

The prior research indicates that the characteristic of online and offline health information seekers were different such as age, income, and education. [(4)] Also, ethnicity, gender, and socio-economic positions were shown to be the significant factors of health information seeking. [(5)] However, little is known about how much the trustworthiness of the media sources and how much do individuals understand the health information.

The purpose of this study is to identify: What are the distributions of individuals paying attention to the media sources? If an individual pays attention to the specific media sources, what are the percentages of individuals trusting the information? What demographic variables are significantly associated with health information overload with the specific sources? The findings would identify the correlates that can explain the reasons for the individuals who may have difficulty on seeking a huge among of health information from different sources, and help the policy makers to reduce information overload burdens by organizing and representing the health information more effectively.

MATERIAL AND METHODS

The Health Information National Trends Survey 2012 (HINTS) is a telephone and survey conducted by the National Cancer Institute to study health information seeking behavior. The missing data was excluded. The final dataset included 3,586 individuals who looked for information about health or medical topics from any sources. The response variablewe measured from the National Trends Survey: "Based on your most recent search for information about health and medical topics, how much do you agree or disagree: The information you found was hard to understand" The responses were classified as strongly agree (= 1), somewhat agree (= 2), somewhat disagree (= 3), and strongly disagree (= 4). This variable was collapsed into two groups: those who reported strongly agree and somewhat agree as health information overload (= 1) and those who did not (= 0) as non-information overload.

Socio-demographic characteristics

The following socio-demographic variables were included in the analysis: age (18-34, 35-49, 50-64, 65-74, 75+); gender; marital status (married or single); education levels (<high school, high school graduate, some college, college graduate); race/ethnicity (Hispanic, non-Hispanic white, non-Hispanic black); annual family income (<$20,000, $20000-$34,999, $35000-$49,999, $50,000-$74,999, ≥$75,000.

Media Sources

There are so many media sources that an individual could look for the health information. It is important to understand how much they pay attention to the media sources. The four questions include "How much attention do you pay to information about health or medical topics from: Special

health or medical magazines or newspapers? From: The internet? From: National or cable television news programs? From: The radio?" Participants were asked to respond from a lot (= 1) to none (= 4). These variables are collapsed into two groups: those who reported a lot or some as "pay attention" (= 1) and those who reported a little or none as "don't pay attention" (= 2).

Trustworthiness Information

It is worth to understand how much they trust the health information when the individuals pay attention to the specific media sources. The four questions include: "In general, how much do you trust information about health or medical topics from: Newspapers or magazines? From: Internet? From: Television? From: Radio?" Participants were asked to respond from a lot (= 1) to none (= 4). These variables are collapsed into two groups: those who reported a lot or some as "confident on information" (= 1) and those who reported a little or none as "no confident on information" (= 2).

The following graph is a summary of the purpose of this paper:

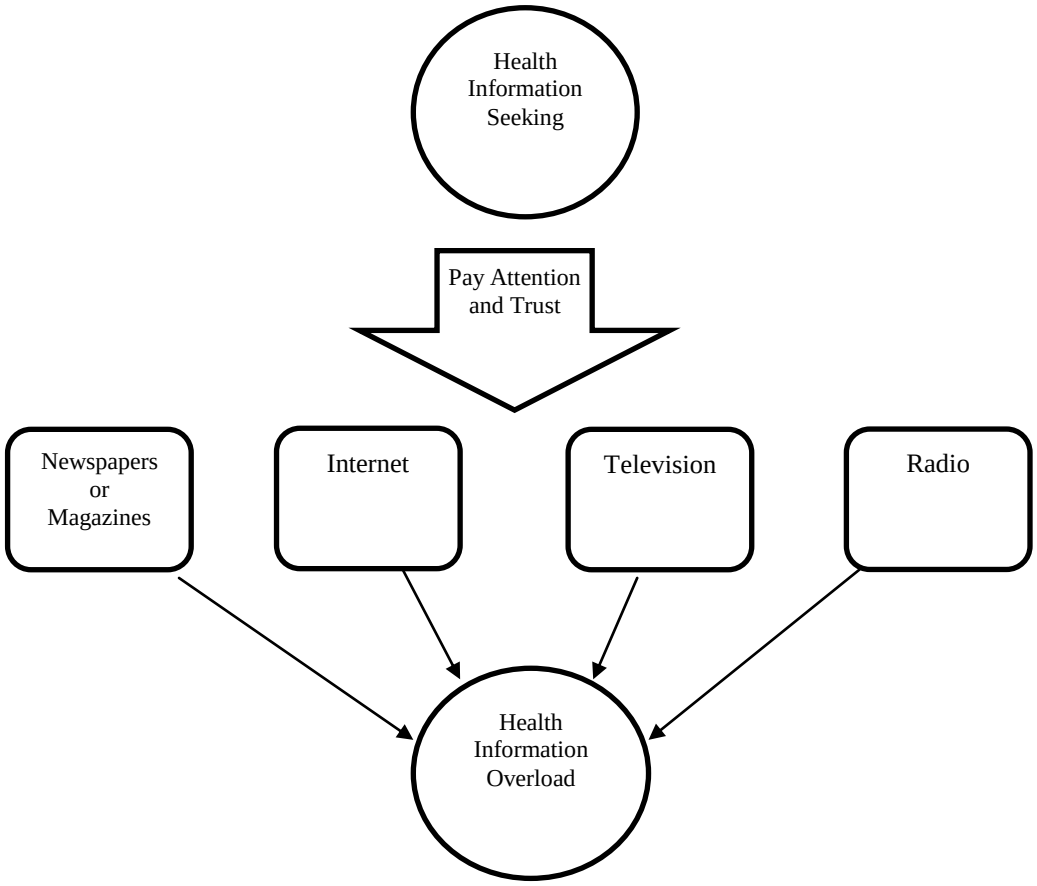

Figure 1: Conceptual framework of health information overload.

Statistical Methods

Data analysis was conducted by STATA 11 software (College Station, Texas, USA). A descriptive statistics was performed to evaluate the credibility of a variety of media sources such as internet, radio, television, and newspapers or magazines. A series of Chi-squared tests were performed to determine whether significant differences between the health information overload and demographic variables.

RESULTS

Most of the sample population is between 50-64 years of age (35%). The majority of responders reported non-Hispanic white (73%). About 45% of the respondents reported college graduate while 6% reported less than high school. Annual house income status shows that 32% have $75,000 or more and 19%reported less than $20,000. Almost 59% of the respondents reported they are married or living as married. The frequency of the individuals pay attention to the media sources and trust the information are shown in Figure 2. Note: an individual might pay attention and trust the information on more than one category.

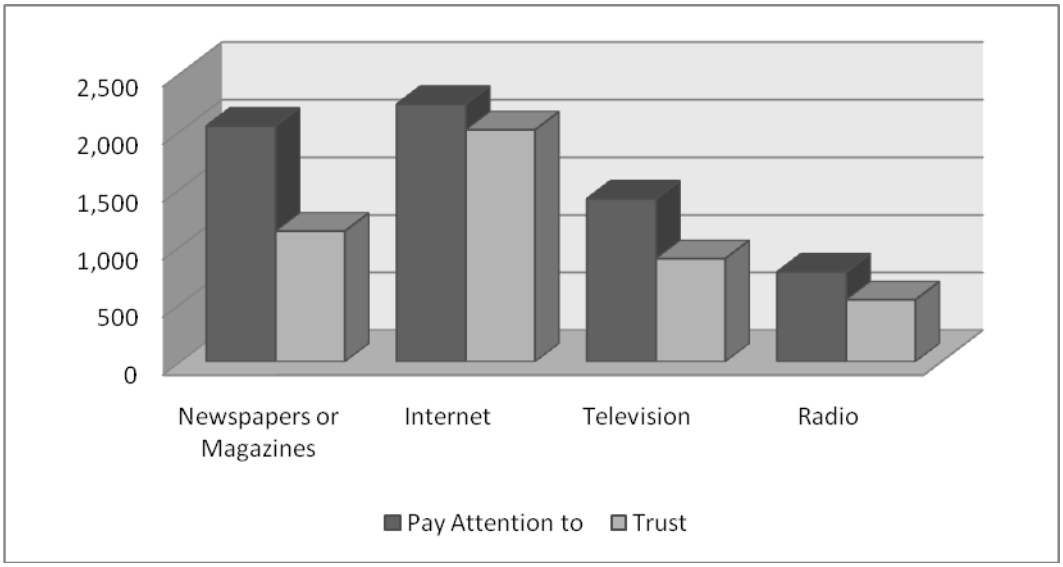

Figure 2: Characteristics of Attention and Trust the Media Sources.

The most individuals pay attention to is internet, followed by newspapers or magazines, then television, finally radio. However, the percentage of individuals paying attention and trust the information are 90% for internet, 69% for radio, 63% for television, and 55% for newspapers or magazines.

The percentages of individuals seeking and trusting the health information from a variety of media sources are shown in Table 1.

Table 1: Percentages of seeking and trust health information by media sources.

Variables	Newspapers or Magazines (%) (n=883)	Internet (%) (n=1,606)	Television (%) (n=682)	Radio (%) (n=415)
Age				
18-34	15%	17%	14%	14%
35-49	28%	28%	28%	26%
50-64	38%	39%	40%	43%
65-74	12%	12%	12%	12%
75+	7%	5%	6%	5%
Education				
less than high school	5%	4%	7%	5%
high school graduate	16%	14%	16%	17%
some college	32%	33%	33%	32%
college graduate or more	47%	50%	44%	47%
Gender				
Male	33%	36%	33%	37%
Female	67%	64%	67%	63%
Race				
hispanic	14%	12%	15%	15%
White	66%	72%	60%	63%
African American	20%	15%	25%	22%
Income				
less than $20,000	17%	15%	21%	17%
$20,000 to < $35,000	16%	14%	15%	14%
$35,000 to < $50,000	15%	15%	17%	15%
$50,000 to < $75,000	19%	20%	17%	19%
$75,000 or more	32%	36%	29%	34%
Marital Status				
Married	57%	60%	55%	60%
Single	43%	40%	45%	40%

In general, individuals with age 50-64 years, who has higher education, who are female, who are white, who has higher income and married, are more likely to search and trust the health information using different media sources.

The percentages and a series of chi-square analysis between Socio-demographic factors and health information overload are shown in Table 2.

Table 2: Chi SquareTest between media sources and health information overload

Seeking Health Information

	Newspapers or Magazines (n=883)			Internet (n=1,606)			Television (n=682)			Radio (n=415)		
Variables	Information Overload (%)	Non-Information Overload (%)	p-value	Information Overload (%)	Non-Information Overload (%)	p-value	Information Overload (%)	Information Overload (%)	p-value	Information Overload (%)	Non-Information Overload (%)	p-value
Age			0.002			0.076			0.005			0.033
18-34	25.95	74.05		21.9	78.1		29.79	70.21		25.86	74.14	
35-49	12.24	87.76		15.16	84.84		12.77	87.23		13.89	86.11	
50-64	21.6	78.4		21.75	78.25		18.55	81.45		16.11	83.89	
65-74	21.5	78.5		19.79	80.21		17.86	82.14		20.41	79.59	
75+	30.65	69.35		17.81	82.19		29.27	70.73		40	60	
Gender			< 0.0001			0.01			0.22			0.37
Male	27.15	72.85		22.91	77.09		21.68	78.32		20.78	79.22	
Female	16.89	83.11		17.63	82.37		17.76	82.24		17.24	82.76	
Race			0.13			0.01			0.614			0.017
Hispanic	26.61	73.39		27.14	72,86		22.55	77.45		30.16	69.84	
White	19.8	80.2		18.02	81,98		18.63	81.37		14.94	85.06	
African American	17.34	82.66		20.65	79.35		18.02	81.98		20.88	79.12	
Education			0.004			0.021			0.072			0.002
< high school	31.91	68.09		29.23	70.77		28.89	71.11		40	60	
high school graduate	26.62	73.38		20.18	79.82		23.42	76.58		25.71	74.29	
some college	22.03	77.97		22.14	77.86		19.91	80.09		21.37	78.63	
college graduate	15.57	84.43		16.9	83.1		15.33	84.67		11.86	88.14	
Marital Status			0.33			0.891			0.176			0.11
Married	19.12	80.88		19.44	80.56		17.2	82.8		16.06	83.94	
Single	21.78	78.22		19.72	80.28		21.29	78.71		22.29	77.71	
Income			0.001			< 0.0001			0.104			0.029
< $20,000	30.46	69.54		27.57	72.43		24.83	75.17		30	70	
$20,000 to < $35,000	22.7	77.3		24.45	75.55		23.81	76.19		17.24	82.76	
$35,000 to < $50,000	19.4	80.6		20.43	79.57		17.39	82.61		21.88	78.13	
$50,000 to < $75,000	21.51	78.49		18.18	81.82		14.41	85.59		18.75	81.25	
$75,000 or more	13.33	86.67		14.66	85.34		16.08	83.92		11.89	88.11	

With respect to newspapers or magazines, difficulty was found to be significantly related to age ($p = 0.002$), gender ($p < 0.0001$), education ($p = 0.004$), and income ($p = 0.001$). Individuals were more difficult to understand health information with age over 75, those who are male, those who did not graduate from college, and whose annual incomes were less than $20,000. Race and marital status were shown insignificant associated with difficulty to understand health information.

With respect to internet, difficulty was found to be significantly related to gender ($p = 0.01$), race ($p = 0.01$), education ($p = 0.021$), and income ($p < 0.0001$). Individuals who were male, those who were Hispanics, those who did not graduate from college, and whose annual incomes were less than $20,000, were more likely to have trouble on understanding the health information. Age and marital status were not significant associated with understanding the health information.

Under the category of television, age is only significant related to understand the health information with a p-value of 0.005. Individuals with age between 18-34 or 75+ were more likely to suffer the health information problems. Gender, race, education, marital status, and income were shown insignificant associated with health information.

In view of radio, difficulty was found to be significantly related to age (p = 0.033), race (p = 0.017), education (p = 0.002), and income (p = 0.029). Individuals with age over 75, who were Hispanics, those who did not graduate from college, whose annual income were less than $20,000 were more likely to have difficulty to understand health information. Gender and marital status were not significant associated with health information.

DISCUSSION

Health information seeking plays a crucial role in societies. People might make a lot of efforts to find trustable information from a variety of media sources. The internet has become the most convenient way to access health information. Research has found that the internet is an important source to seek health information. [(6)] Our results showed that the most people prefer to look for the health information online. It is consistent with their findings. However, little is known about trusting the information from the internet. The results indicated that internet is also the most trustable media source, followed by radio, then television, finally newspapers or magazines. One of the reasons why radio, television, and newspapers or magazines are not the most popular sources to look for the health information is the difficulties of understanding for health topics. Marcus et.al, reported that people are not necessarily expert in understanding their health messages through broadcast media advertising such as television and radio advertisement. [(7)]

Existed research revealed that individuals who were younger than 65 years, those who were female and white, and those who had higher education and income, were more likely to search health information online. [(8)] Our results show that individuals being female and white, who were younger than 65 years, and who had higher education and income are more frequent to search health information online which is consistent with our findings. In addition, married couples are more common to search health information from the internet.

Information overload plays an important role. With trustworthy information, People might easily suffer from overload because of receiving a variety of information. Research has found that demographic variables were significantly associated with information overload such as sex (female) and age (older adults). [(9)] Within radio, television, and newspapers or magazines, older adults are more likely to suffer information overload. This is consistent with their findings. However, age is not significantly associated with information overload within internet. One explanation is that older people have a difficult time to use the internet. Mann et al. revealed that many elders do not use a computer or find using a computer difficult. [(10)] Male was found to be more likely to suffer overload in internet and newspapers or magazines while gender is not significantly associated with overload in radio and television. This relationship of gender and information overload still needs further exploration.

Kim et al. revealed that race was not significantly associated with information overload. [(11)] Our findings showed that race is insignificantly associated with overload in television and newspapers or magazines but it is significant in internet and radio. One of the reasons might be because internet and radio are the most trustworthy media sources. In general, marital status shows insignificantly associated with overload along the media sources. One possible explanation is that both married and non-married individual pay attention to the healthcare information. Bullers reported that

there was no different between married and non-married individual about self-reported health and perceived control. [(12)]

Individuals with higher income, higher education were less likely to report having experienced on information overload. [(11)] We found that people who had higher education, who had higher income, were less common to suffer information overload in internet, radio, and newspapers or magazines which is consistent to their findings. However, income and education are not significantly associated with information overload in television. One possible explanation is that television is not credible media source compared with others. Abdulla et al. reported that people rated online news and newspapers as more credible than television. [(13)]

CONCLUSION

In this present study, we first examined the trustworthy health information from a variety of media sources. Our findings revealed that internet was the most people trust, followed by radio, then television, and finally newspapers or magazines. We further explored demographic characteristics associated with health information overload using HINTS data. Our results showed that demographic variable was shown significant associated with overload along with different media sources. An important finding in this analysis is to understand the significant demographic factors associated with health information overload in different media sources. When providing health information, health information professionals should realize the importance of delivering health information in the variety of media sources.

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