Sources and Reasons for Seeking Health Information by Lithuanian Adults

Daiva Marazienė[1], Jūratė Klumbienė[2], Jūratė Tomkevičiūtė[1], Irena Misevičienė[1]
[1]Department of Health Systems Research, Institute of Health Research, Medical Academy, Lithuanian University of Health Sciences, [2]Department of Chronic Diseases Prevention, Institute of Health Research, Medical Academy, Lithuanian University of Health Sciences, Lithuania

Key words: *health information; sources and reasons for seeking health information; trust in the sources of information about health.*

Summary. *The aim of this study was to assess the attitudes of Lithuanian adults aged 20–64 years toward the reasons for accessing health information and to determine the main health information sources and their relation to sociodemographic factors.*

Material and Methods. The data for this study were gathered in 2008 within the framework of the International Project Finbalt Health Monitor evaluating health behavior in a Lithuanian adult population.

Results. More than half of respondents searched for health information during the last year. Men were 2.7 times more likely to trust friends and family as a health information source compared with women. For each 1-year increase in age, the odds of using friends and family, and the Internet as the main sources of health information decreased, while the odds of using people with the same condition and different means of media increased. Marital status was associated with greater trust in health professionals and the Internet as health information sources. Higher education was positively associated with more frequent reporting courses and lectures, and the Internet as the sources of health information, while those with lower education preferred television and radio.

Conclusions. This study revealed the characteristics of the "risk group" in terms of the sources of health information that people, assigned to it, tend to use, and it is especially important when providing health information.

Introduction

Health information is a major component of health promotion (1). The definition of health information itself suggests that health information increases the awareness and favorably influences attitudes and knowledge related to the improvement of health on a personal or community basis (2). Lambert and Loiselle (3) have reported that the sociodemographic characteristics of individuals influence how much information is sought, what sources are used, and how the information is obtained. For example, younger educated individuals, especially women, are often reported to be active information seekers (4). Information about health is widely available from a variety of different sources, ranging from neighbors and colleagues to mass media – printed or electronic (5, 6). When asked about the main source of information about health, a large proportion of European Union (EU) citizens mentioned health professionals with one-fifth of respondents reporting that television was their main source of information about health (7). In the United States, Liccardione et al. (2000) using the data from the Second Osteopathic Survey of Health Care in America (8) found that the frequencies of using the different health information sources were as follows: newspapers or magazines, 69%; radio, 30%; television, 56%; and the Internet, 32%. French scientists in their survey performed on a representative random sample of the population of the Paris metropolitan area found that the most common source of health information mentioned by the survey respondents was their physician (9). A study carried out in Switzerland showed that a large majority of men and women (87.8%) would turn to physicians in case they would need information about health issues. Nearly one-third (32.9%) of participants reported using the relatives as a source of health information; 28.1%, television and radio, and only 4.2%, the Internet (10).

The Internet is a relatively new source of health information. There are numerous studies carried out about health information seeking on the Internet, and most of them found that online health seekers are more likely to be younger and to have a higher level of education. Ybarra et al. (2004–2008) conducted a study about reasons for using the Internet as a source. The results showed that 75% of health information seekers reported using the Internet to access information about a loved one's health or

Correspondence to D. Marazienė, Department of Health Systems Research, Institute of Health Research, Medical Academy, Lithuanian University of Health Sciences, Eivenių 4, 50161 Kaunas, Lithuania. E-mail: d.maraziene@ddm.lt

medical condition, whereas 70% reported looking for information about a personal health or medical problem (11).

Reports by Worsley (1989) have confirmed that the family physician and the pharmacist were generally regarded as the most reliable sources, whereas TV advertisements, and newspaper and magazine articles were among the least reliable (12). It was suggested that trust in health information sources was strongly age- and sex-dependent: the individuals aged 18 to 34 and 35 to 64 years (13) and women (2) were those who trusted health information sources the most. The differences in trust by age are especially pronounced for the Internet: adults aged 18 to 34 years were more than 10 times as likely and adults aged 35 to 64 years were more than 5 times as likely to report a lot or some trust in the Internet as compared to their counterparts aged 65 years and more (13). The level of education was also independently associated with trust of most health information sources as those with higher levels of education (i.e., secondary school education or higher) were more trusting the Internet, magazines, and newspapers than individuals with incomplete secondary education (13). The reliance on health professionals for information was stronger for women and tended to increase with age (14). Young people rated the reliability of commercial media sources better than other respondents (15). Less than half (43.1%) of people in the EU do not trust media as a source of health information, whilst 39.3% do so (7).

At present, there are no population-based surveys that would have been carried at a national level and would have examined the reasons of why people are searching for health information. There are many studies about health information searching by different population groups, different countries, urban/rural population, healthy or sick peoples, groups of patients with different diagnoses, etc., but there are no surveys on representative samples at a national level. This survey is the first population-based survey at a national level. To our knowledge, there is no other publication that would show the existing trends on the use of the Internet for seeking health information and describing the reasons why people are looking for health information not only in the Baltic States, but also in other new EU countries.

Lithuania, together with Finland, Estonia, and Latvia, has been participating in the International Project Finbalt Health Monitor already for 16 years. Since 1994, 8 health behavior surveys on the national samples of adult population have been carried out every 2 years in Lithuania (16). It was decided to use the International Project Finbalt Health Monitor and incorporate the specific questions into the existing systems in order to achieve the aim of the study, i.e., to assess the opinions of the Lithuanian adult population regarding the reasons for seeking health information. The study also aimed to evaluate the reliability of health information accessed by the Lithuanian adult population, including the investigation of relations with sociodemographic factors.

Material and Methods

A total of 3000 inhabitants of Lithuania aged 20–64 years were randomly selected from the National Population Register. In April 2008, the questionnaires were mailed to the selected individuals. Those who did not respond within a month received a second questionnaire in May. The addresses of 96 inhabitants (3.2%) in the list of population were incorrect. Therefore, the eligible sample comprised 2904 persons. The questionnaires were filled in by 737 men and 1026 women. The response rate was 60.7%.

The standardized questionnaire was used in the survey. Only in the 2008 survey (surveys have been repeated each 2 years since 1994), the additional questions about the most used and most trusted health information sources were included into the questionnaire. Information about health information seeking behavior was elicited in the following question: "Have you ever looked for health information in the past 12 months?" "Yes" or "no" were the possible answers. Next, only responses of health information seekers (those who looked for health information in the past 12 months) were analyzed. In an attempt to clear reasons why respondents look for health information, they were asked to indicate the reasons by choosing them from the list that included the following: 1) to find information because of health problems; 2) because of family members' disease; 3) to make decision about treatment or medication; 4) to find more information about health maintenance; and 5) other reasons. The respondents were also asked about their use of different health information sources with the following question: "Usually where are you looking for information about health?" The possible answers were as follows: 1) friends and family; 2) colleagues and neighbors; 3) a physician, a nurse, a pharmacist, and other health professionals; 4) people with the same medical condition; 5) television; 6) radio; 7) books; 8) pamphlets and brochures; 9) newspapers and magazines; 10) courses and lectures; 11) the Internet; and 12) other sources (please list). Trust in health information sources was assessed based on the question: "What sources about health do you trust most?" The possible answers were the same as in the previous question.

The collected information covered sociodemographic characteristics (age, gender, education, marital status, nationality, and place of residence); health information seeking behavior, the most used

Table 1. Characteristics of the Study Population

Characteristic	Men N=737	Women N=1026
Age groups		
20–34 years	29.4	28.2
35–54 years	51.1	47.4
55–65 years	19.4	24.4
Level of education		
Primary/incomplete secondary/ secondary	53	33.9
Vocational/college	25.4	31.2
University education	21.7	35
Place of residence		
Cities	45.4	50.5
Towns	41.6	35.0
Villages	13.0	14.6
Marital status		
Married	73.9	63.2
Other	26.1	36.8
Nationality		
Lithuanians	89.6	86.6
Other	10.4	13.4

Values are percentages.

and trusted sources of health information, and reasons why respondents look for information about health. Education was measured by 6 educational levels: primary, incomplete secondary, secondary, vocational, college, and university. The respondents with primary, incomplete secondary, and secondary education were grouped together into one group, and those with vocational and college education were also grouped into one group. The respondents were also grouped according to their place of residence as those living in cities, towns, or villages. Marital status was dichotomized as married and other (single, divorced, or widowed) (Table 1).

Statistical analysis was performed using the statistical software SPSS 11.0 for Windows. Differences in the distribution of the study participants were compared with the use of χ^2 test. A bivariate analysis was conducted, estimating unadjusted likelihood ratios in order to determine the associations between sociodemographic factors and information sources. The covariates included in the logistic regression models were gender (men versus women), marital status (married versus other), nationality (Lithuanian versus others), place of residence (urban versus rural), and education (vocational/college/university versus primary/incomplete secondary/secondary); age was included in the model as a continuous variable.

Results

More than half (57.7%) of respondents indicated that they looked for information about health during the last year (12 months). A greater percentage of older respondents than younger looked for information about health (51.5% aged 20–34 years vs. 65.1% aged 55–65 years; P=0.001). Every fourth-fifth respondent most frequently reported the following reasons for seeking health-related information: because of their health problems (28.9%), wanted to find more information about health maintenance (26.7%), and because of family members' disease (21.1%). Respondents were asked to indicate the sources they used to obtain health information by choosing them from a list, which included both interpersonal sources and printed material or mass media sources (Fig. 1). A large proportion of the Lithuanian citizens mentioned health professionals (pharmacists, physicians, etc.) as the main source of information about health. Overall, 3 sources of information most frequently mentioned were as follows: health professionals, the Internet, and newspapers and magazines. On the other hand, courses and lectures, radio, and colleagues and neighbors were among the least mentioned ones. Women were more likely to look for information about health than men (70.7% versus 39.8%, P=0.001). Women looked for information about health because of their family members' diseases more often than men (40.6% and 33.6% respectively, P=0.02) and for reason to make decision about treatment or medication (32.2% and 24.6% respectively, P=0.01). Women were more likely to get their health information from friends, colleagues, health professionals, books, newspapers, magazines, and courses and lectures than men. Friends and family members as the source of health information were used more frequently by younger respondents (24.3% in the 20–34 age group and only 15.6% in the 55–64 age group, P=0.001). There was a significant linear increase in the percentage of respondents reporting television as a source of health information with increasing age (20–24 year olds, 18.4%; 25–34 year olds, 23.4%; 35–44 year olds, 28.0%; 45–54 year olds, 37.6%; and 55–64 year olds, 49.8%). Other

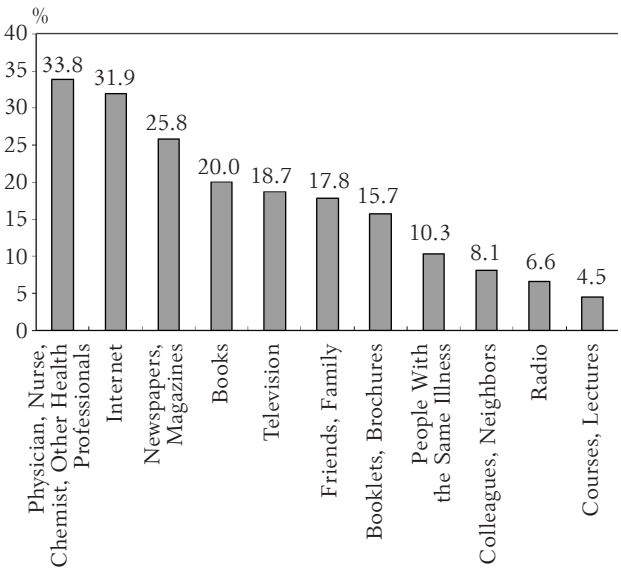

Fig. 1. Sources of health information mentioned by Lithuanian adults

sources more popular among older respondents were radio (12.2% in the 55–64 age group and only 4.3% in the 20–34 age group, P=0.001), books (26.4% in the 55–64 age group and only 16.8% in the 20–34 age group, P=0.001), brochures and booklets (23.2% in the 55–64 age group and 11.2% in the 20–34 age group, P=0.001), and newspapers and magazines (36.4% in the 55–64 age group and only 19.1% in the 20–34 age group, P=0.001). On the other hand, there was a decrease in the percentage of respondents using the Internet as an information source with increasing age (20–24 years, 89.7%; 25–34 years, 79.6%; 35–44 years, 66.4%; 45–54 years, 52.6%; and 55–64 years, 30.9%).

Health professionals were reported as the most trusted source of health information, with 70.9% of respondents choosing this option. The Internet was the second most trusted source of information mentioned by 16.6% of respondents. The least trusted sources of information were colleagues and neighbors with only 2.5% of respondents preferring this option. There was a significant difference between men and women regarding their trust in the different sources of health information. Women tended to trust physicians, chemists, nurses and other health professionals, books, pamphlets, booklets, newspapers and magazines, and courses and lectures more frequently compared with men. Men reported friends and family as the sources they trusted more. Younger respondents were more likely to trust family and friends, courses and lectures, people with the same illness, and the Internet than the older ones. Newspapers, magazines, and radio were trusted more often by older respondents.

The educational level of respondents was related to the frequency and reasons why people were looking for health information. The respondents with higher education looked for health information more frequently than those with lower education (68.6% with university education versus 44.9% with primary/incomplete secondary/secondary education, P<0.05). The respondents with primary/incomplete secondary/secondary school education looked for health information because of family members' diseases less frequently than those with university education (35.5% versus 44.2%, P=0.005). Better education was positively associated with reporting courses and lectures (2.9% in primary/incomplete secondary/secondary school education group; 10.0% in vocational/college, and 11.5% in university education, P=0.001) and the Internet (primary school/incomplete secondary/secondary school, 41.6%; university, 79.9%, P=0.001) as usually used sources of health information. The respondents with lower educational level preferred television (primary school/incomplete secondary/secondary school, 42.3%, versus university, 24.2%, P=0.001) and radio (primary/incomplete secondary/secondary, 16.8%, and university, 8.8%, P=0.003).

People with higher education tended to trust books, courses and lectures, and the Internet more than their worse educated counterparts. The respondents with lower education preferred to trust television as the source of information about health (Fig. 2).

Married respondents reported more frequently than others that they looked for health information because of their family members' disease (42.8% versus 29.4%, P=0.001). A physician, a nurse, a chemist, and other health professionals together with courses and lectures were mentioned as the most trusted health information sources more frequently by married respondents than others (72.6% versus 66.9%, P<0.05, and 7.7% versus 12.0%, P<0.05).

Lithuanians less frequently than others reported television as a usually used source of health information (33.3% versus 41.1%, P=0.05). The re-

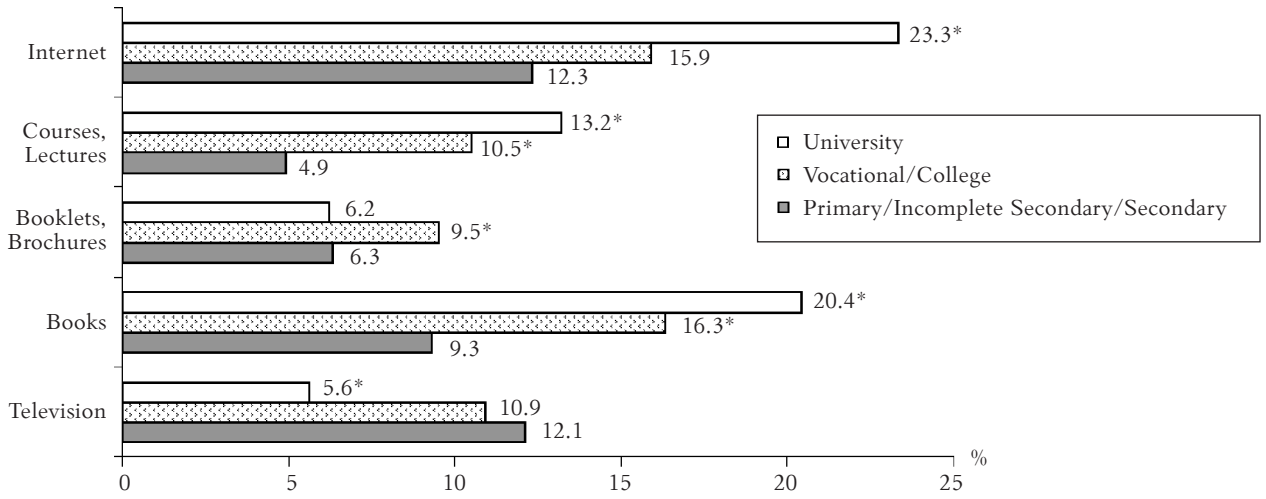

Fig. 2. Trusted sources of information about health by educational level
*P<0.05, compared with primary/incomplete secondary/secondary education.

spondents of other nationalities mentioned books, and family and friends as the sources of health information more frequently than Lithuanians (43.5% and 13.7% versus 35.6% and 9.4%, respectively, $P<0.05$).

Significant differences in mentioning television and books as the most trusted sources were found by place of residence. The respondents living in cities more frequently trusted books as a source about health information than television (16.8% versus 8%, $P<0.05$). The respondents living in villages more frequently trusted television as a source about health information than those living in cities and towns (12.1% versus 11.4% and 8.0%, $P<0.05$).

The associations between the abovementioned sociodemographic characteristics and the use of health information sources were evaluated using a multivariate analysis. Men were considerably less likely than women to get health information from colleagues and neighbors; a physician, a nurse, a pharmacist, and other health professionals; books; newspapers and magazines; and courses and lectures (Table 2).

For each 1-year increase in age, odds of using people with the same medical condition, television, radio, booklets and brochures, and newspapers and magazines as the main sources of health information increased. Contrary, for each 1-year increase in age, odds of using friends and family, and the Internet as the main sources of health information decreased. The respondents with vocational / college/university education were 1.7 times more likely to use television than those with primary/incomplete secondary/secondary education. Marital status was associated with 1.4-fold greater odds of using the Internet as a health information source as compared with unmarried status. The respondents living in urban areas were considerably less likely to get health information from radio as compared with those living rural areas (Table 2).

Men were 2.7 times more likely to trust friends and family as a health information source, but were less likely to trust a physician, a nurse, a pharmacist, and other health professionals; books; booklets and brochures; and newspapers and magazines as compared with women. For each 1-year increase in age, there was a greater likelihood to trust the following health information sources: radio; booklets and brochures; and newspapers and magazines. On the contrary, for each 1-year increase in age, there was a lower likelihood to trust friends and family, books, courses and lectures, and the Internet as the sources of information. The respondents with vocational/college/university education were less likely to trust books, courses and lectures, and the Internet as the sources of health information than for those with primary/incomplete secondary/secondary school. Marital status was also associated with a 1.33-fold

Table 2. Odds Ratios of the Use of Health Information Sources by Sociodemographic Characteristics[#]

Sources Of Information	Men vs. Women	Age (Per Year)	Lithuanian vs. Other	Married vs. Other	Vocational/College/ University vs. Primary/ Incomplete Secondary/ Secondary School	Urban vs. Rural
Friends and family	1.16 (0.85–1.58)	0.96* (0.95–0.97)	0.83 (0.55–1.26)	1.07 (0.78–1.47)	1.26 (0.93–1.70)	1.24 (0.88–1.76)
Colleagues and neighbors	0.46* (0.29–0.73)	1.00 (0.98–1.01)	1.24 (0.70–2.18)	1.38 (0.91–2.09)	1.28 (0.87–1.89)	1.17 (0.74–1.86)
Physician, nurse, chemist (pharmacist), and other health professionals	0.7* (0.52–0.93)	1.00 (0.99–1.02)	0.98 (0.66–1.46)	1.04 (0.78–1.40)	1.05 (0.79–1.40)	0.75 (0.54–1.04)
People with the same illness	0.74 (0.50–1.08)	1.01* (1.00–1.03)	1.14 (0.69–1.88)	1.06 (0.73–1.52)	1.22 (0.86–1.73)	0.78 (0.53–1.15)
Television	0.88 (0.64–1.21)	1.05* (1.03–1.06)	0.83 (0.55–1.26)	0.80 (0.59–1.10)	1.65* (1.23–2.23)	0.75 (0.53–1.05)
Radio	1.34 (0.87–2.05)	1.04* (1.02–1.06)	1.49 (0.78–2.84)	0.73 (0.47–1.12)	1.65 (1.09–2.48)	0.58* (0.37–0.91)
Books	0.63* (0.46–0.86)	1.01 (1.00–1.02)	0.74 (0.50–1.10)	1.15 (0.85–1.54)	0.80 (0.59–1.07)	1.13 (0.81–1.58)
Booklets and brochures	0.79 (0.57–1.10)	1.02* (1.01–1.03)	1.07 (0.70–1.64)	0.92 (0.67–1.26)	1.19 (0.88–1.62)	0.83 (0.59–1.18)
Newspapers and magazines	0.72* (0.54–0.96)	1.03* (1.01–1.04)	0.84 (0.57–1.24)	1.09 (0.81–1.45)	1.05 (0.79–1.39)	0.84 (0.61–1.15)
Courses and lectures	0.46* (0.24–0.87)	0.99 (0.97–1.01)	1.53 (0.68–3.44)	1.00 (0.60–1.68)	0.24* (0.11–0.50)	1.22 (0.65–2.30)
Internet	0.89 (0.64–1.23)	0.92* (0.91–0.93)	1.08 (0.69–1.69)	1.42* (1.02–1.99)	0.32* (0.23–0.44)	1.58 (1.10–2.27)

Data represent a likelihood of use of information source versus no use of information source for Lithuanian adults with a particular characteristic. Odds ratio of >1 indicates greater use of information source; odds ratio of <1 indicates lower use of information source. [#]Adjusted for gender, age, nationality, marital status, education, and place of residence. *OR are statistically significant ($P<0.05$).

greater likelihood in trusting a physician, a nurse, a pharmacist, and other health professionals. Married people were less likely to trust courses and lectures. Being a Lithuanian was associated with a lower likelihood of trusting friends and family. The respondents living in cities and towns were significantly more likely to trust health information from friends and family (Table 3).

Discussion

The assessment of the reasons why adults are looking for health information, including the reliability of this information, is a very important and useful study area for the successful implementation of prevention of noncommunicable diseases as well as for successful health education programs. Many such studies have been performed in other countries, but not so many at a national level including the surveys of random population samples as we did in Lithuania. According to our study results, more than half of Lithuanians indicated that they looked for information about health during the last year. These results suggest that there is a considerable demand for health-related information. Nevertheless, the surveys carried out by Lambert and Loiselle (2007) have shown that information alone does not guarantee healthy behaviors: a high percentage of information seekers do not imply that health messages are used or understood by the recipient. In some cases, information seekers experience more negative outcomes (e.g., feeling overwhelmed and more worried), but search for information is generally reported as positive, because adequate information might motivate individuals to make positive changes in their health practices (3).

Every fourth-to-fifth Lithuanian citizen most frequently cited that the reason to look for health information was to find information because of health problems. In addition, every second most mentioned reason in our survey was to find more information about health maintenance. These findings indicate that Lithuanian citizens are interested in taking care of themselves until they become healthy. A large proportion of Lithuanian citizens mentioned health professionals as the main source of information about health. This finding is in line with the results from other numerous studies, which have found that physicians and nurses are a primary source of health information in both mainstream and minority populations (2, 7, 10–11). The findings suggest that all health professionals should be trained to recommend their patients how to maintain their good health and to inform about reliable sources of health information.

Table 3. Odds Ratios of Trust of Health Information Sources by Sociodemographic Characteristics#

Sources of Information	Men vs. Women	Age (Per Year)	Lithuanian vs. Other	Married vs. Other	Vocational/College/ University vs. Primary/ Incomplete Secondary/ Secondary School	Urban vs. Rural
Friends and family	2.72* (1.94–3.82)	0.98* (0.97–0.99)	0.59* (0.38–0.92)	1.00 (0.69–1.44)	0.84 (0.60–1.17)	1.56* (1.02–2.38)
Colleagues and neighbors	1.26 (0.68–2.34)	0.99 (0.97–1.02)	0.70 (0.31–1.61)	1.18 (0.60–2.35)	1.00 (0.54–1.86)	0.99 (0.48–2.05)
Physician, nurse, chemist (pharmacist), and other health professionals	0.76* (0.61–0.94)	1.00 (0.99–1.01)	1.11 (0.81–1.53)	1.33* (1.06–1.68)	1.05 (0.84–1.30)	0.83 (0.64–1.07)
People with the same illness	0.86 (0.62–1.18)	0.99 (0.98–1.00)	1.08 (0.67–1.75)	1.08 (0.77–1.51)	0.99 (0.72–1.37)	1.16 (0.79–1.71)
Television	0.94 (0.67–1.31)	1.02 (1.01–1.03)	0.86 (0.54–1.36)	0.94 (0.66–1.33)	1.52 (1.09–2.10)	0.72 (0.50–1.04)
Radio	1.39 (0.84–2.30)	1.03* (1.01–1.05)	1.31 (0.59–2.92)	0.68 (0.41–1.14)	1.27 (0.77–2.07)	0.98 (0.55–1.75)
Books	0.64* (0.48–0.87)	0.98* (0.97–0.99)	0.69 (0.47–1.02)	0.93 (0.69–1.25)	0.47* (0.34–0.64)	1.27 (0.89–1.82)
Booklets and brochures	0.64* (0.43–0.96)	1.02* (1.00–1.03)	1.25 (0.69–2.28)	0.86 (0.58–1.28)	0.86 (0.58–1.26)	0.79 (0.51–1.21)
Newspapers and magazines	0.66* (0.46–0.94)	1.02* (1.01–1.04)	0.77 (0.49–1.22)	0.87 (0.61–1.24)	1.02 (0.73–1.44)	1.06 (0.70–1.60)
Courses and lectures	0.70 (0.49–1.02)	0.98* (0.97–1.00)	1.53 (0.85–2.78)	0.69* (0.48–0.98)	0.39* (0.26–0.58)	1.16 (0.75–1.78)
Internet	1.08 (0.82–1.41)	0.96* (0.95–0.98)	0.82 (0.56–1.21)	1.27 (0.95–1.71)	0.53* (0.40–0.70)	1.34 (0.96–1.88)

Data represent a likelihood of information source trust versus no trust of information sources for Lithuanian adults with a particular characteristic. Odds ratio of >1 indicates greater trust of information source; odds ratio of <1 indicates less trust of information source. #Adjusted for gender, age, nationality, marital status, education, and place of residence. *OR are statistically significant ($P<0.05$).

Overall, the Internet was the second most frequently mentioned source of health information in Lithuania. European studies have shown that the use of the Internet for health purposes varies in different parts of Europe. In Denmark, the Netherlands, Sweden, Finland, and Luxembourg, the proportions of Internet users reach 41.4%, 38.7%, 33.5%, and 32.4%, respectively (7). Around 70% of European Internet users search for health information on the Internet (17). The proportion of Norwegians who used the Internet for health purposes increased from 19% in 2000 to 31% in 2001 (18) and to 67% in 2007 (19). More than half (60%) of the Danish population used the Internet to seek health-related information in 2005 (20), and already in 2007, this percentage accounted for 72% (21). The Eastern European countries such as Poland and Latvia reported that 42% and 35% of citizens, respectively, use the Internet for searching health-related information, while the Southern European countries had the lowest proportions of Internet health users (30% in Portugal and 23% in Greece) (17). The Department of Statistics in Lithuania showed that 2.3% of households had access to the Internet in 2000 and even 54.7% in 2009 (22). The number of people using the Internet has exponentially increased during the recent years, and the Internet has become a favored source to find health information (23). Looking at all results of this study, it is possible to assume that the percentage of Lithuanians looking for health information on the Internet is likely to increase with an increasing use of this source. However, this new technology also has several shortcomings (24). It would be helpful if health professionals could recommend websites with reliable and accurate information for their patients.

On the other hand, courses and lectures, radio, and colleagues and neighbors were among the least mentioned sources of health information in Lithuania. The situation has changed significantly since 2001, when a study by Javtokas et al. reported the following main sources: television (37.2%), physicians (23.8%), newspapers (18.1%), and radio (10.3%) (25).

Our study as well as the other published surveys showed that women were more likely than men to seek health information from colleagues and neighbors, and books. Women usually are more interested in health issues than men and want to get more information, which is probably related to their social role of caregivers (10). It is important for health care providers and policy-makers to identify what resources are used by women and men for health information.

Older respondents are more likely than younger ones to use newspapers or magazines and television to acquire health information, but less likely to use the Internet (8). Our analysis revealed the same results. Benjami-Garner et al. found that the youngest age group was significantly more likely to report magazines as a source than the middle-aged group (26). The amount of information received from television decreased with age, especially for urban residents. The youngest and oldest groups reported receiving the major part of health information from printed materials. Television was the most common source of health information among middle-aged adults (1).

Higher education was found to be associated with a more frequent use of newspapers or magazines (26) and the Internet as health information sources (8). According to our data, people with vocational or college and university education used the Internet more frequently, and these results are different than in other studies. For example, Benjamin-Garner et al. in their studies showed that friends/coworkers were reported as the sources most frequently mentioned by respondents with education lower than secondary, and comparison with secondary school graduates and those with college education revealed significant differences (26). Lower education seems to be the major factor associated with relying on physicians as a unique source of health information (10). Our study showed that health professionals were the most trusted sources of health information. This finding is in line with the results from the U.S. survey carried out in 2003 where physicians were also mentioned as the most highly trusted information source to patients (13).

Conclusions

Health professionals (pharmacists, physicians, etc.) as the main source of information about health were mentioned by majority of Lithuanian adults. Age, sex, marital status, and education were associated with trust in health professionals and the Internet as health information sources. This study have also revealed the characteristics of the "risk group" in terms of the sources of health information that people, assigned to it, tend to use. These typically include young men, mostly from rural areas and low educational level, which undoubtedly suggests that these particular individuals need to be taken especially into account when providing health information.

Acknowledgments

We would like to thank the study participants and all staff taking part in this survey to get these results. This work was supported by the State budget for science and studies for the Lithuanian University of Health Sciences.

Statement of Conflict of Interest

The authors state no conflict of interest.

References

1. Connell C, Crawford CO. How people obtain their health information – a survey in two Pennsylvania Counties. Public Health Rep 1988;103(2):189-95.
2. Dart J, Gallois C, Yellowlees P. Community health information sources – a survey in three disparate communities. Aust Health Rev 2008;32(1):186-96.
3. Lambert SD, Loiselle CG. Health information-seeking behaviour. Qual Health Res 2007;8:1006-19.
4. Czaja R, Manfredi C, Price J. The determinant and consequences of information-seeking among cancer patients. J Health Commun 2003;8:529-62.
5. Burkell AJ, Wolfe DL, Potter PJ, Jutai JW. Information needs and information sources of individuals living with spinal cord injury. Health info Libr J 2006;23:257-65.
6. Kakai H, Maskarinec G, Shumay DM, Tatsumura Y, Tasaki K. Ethic differences in choices of health information by cancer patients using complementary and alternative medicine: an exploratory study with correspondence analysis. Soc Sci Med 2003;56:851-62.
7. Spadaro R. The European opinion research group. European Union citizens and sources of information about health. Brussels; 2003.
8. Licciardone JC, Smith-Barbaro P, Coleridge S. Use of the Internet as a resource for consumer health information: results of the second osteopathic survey of health care in America (OSTEOSURV-II). J Med Internet Res 2001;3(4): e31.
9. Renahy E, Parizot I, Chauvin P. Health information seeking on the Internet: a double divide? Results from a representative survey in the Paris metropolitan area, France, 2005-2006. BMC Public Health 2008,8:69.
10. Seemater-Bagnoud L, Santos-Eggimann B. Sources and level of information about health issues and preventive services among young-old persons in Switzerland. Int J Public Health 2007;52:313-6.
11. Ybarra M, Suman M. Help seeking behaviour and the Internet: a national survey. Int J Med Inform 2006;75:29-41.
12. Worsley A. Perceived reliability of sources of health information. Health Educ Res 1989;4-3:367-76.
13. Hesse WB, Nelson DE, Kreps, Croyle RT, Arora NK, Rimer BK, et al. Trust and sources of health information. The impact of the Internet and its implications for health care providers: findings from the first Health Information National Trends Survey. Arch Intern Med 2005;165:2618-24.
14. Almeida MDV, Graca P, Lappalainen R, Giachetti I, Kafatos A, Remaut de Winter A, et al. Sources used and trusted by nationally-representative adults in the European Union for information on healthy eating. Eur J Clin Nutr 1997;51(Suppl 2):S16-22.
15. Cotten SR, Gupta SS. Characteristics of online and off-line health information seekers and factors that discriminate between them. Soc Sci Med 2004;59:1795-1806.
16. Grabauskas V, Klumbienė J, Petkevičienė J, Šakalytė E, Kriaučiūnienė V, Veryga A, et al. Suaugusių Lietuvos žmonių gyvensenos tyrimas, 2008. (Health behaviour among Lithuanian adult population, 2008.) Kaunas; 2008.
17. Andreassen H, Bujnowska-Fedak M, Chronaki C, Dumitru RC, Pudule I, Santana S, et al. European citizens' use of E-health services: a study of seven countries. BMC Public Health 2007;7:53.
18. Andreassen H, Sandaune AG, Gammon D, Hjortdahl P. Norwegian use of the Internet health services. Tidsskr Nor Laegeforen 2002;122(17):1640-4.
19. Wangberg S, Andreassen H, Kummervold P, Wynn R, Sørensen T. Use of the internet for health purposes: trends in Norway 2000–2010. Scand J Caring Sci 2009;23:691-6.
20. Voss H, Ravn Bl. Danes and their use of the Internet for health-related purposes. Ugeskrift Laeger 2007;169(24): 2318-21.
21. Rasmussen J, Rohde I, Ravn BL, Sørensen T, Wynn R. Developments in the population's use of the Internet for health-related purposes. Ugeskr Laeger 2009;171(12):1007-11.
22. Statistics Lithuania. Available from: URL: http://www.stat.gov.lt/lt/. Accessed December 8, 2010.
23. Dumitru RC, Burkle T, Potapov S, Lausen B, Wiese B, Prokosch HU. Use and perception of Internet for health related purposes in Germany: results of national survey. Int J Public Health 2007;52:275-85.
24. Benigeri M, Pluye P. Shortcomings of health information on the Internet. Health Promot Int 2003;18:381-6.
25. Javtokas Z, Goštautas A, Žagminas K. Suaugusiųjų Lietuvos gyventojų sveikatos žinių, elgsenos ir įpročių tyrimas. (A study on the health knowledge, behaviour, and habits of the adult population of Lithuania.) Visuomenės sveikatos ugdymo centras. Vilnius; 2001. p. 26-30.
26. Benjamin-Garner R, Oakes JM, Meischke H, Meshack A, Stone EJ, Zapka J, et al. Sociodemographic differences in exposure to health information. Ethn Dis 2002;12(1):124-34.

Received 27 March 2012, accepted 30 July 2012