Differences in Sources of Information Used by the Population between the Affected Area and the General Population during the First Phase of a Bird Flu Outbreak

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SARS = severe acute respiratory syndrome

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Abstract

Introduction: In March 2006, a few cases of bird flu were discovered in approximately 10 rural settlements in Israel. As a result, approximately one million birds were destroyed within a three kilometer radius of the settlements. The Israeli population was instructed to take preventive measures against the spread of the infection.

Objectives: The objective of this study was to compare the frequency of use of different sources of information by the population in the affected area with the general population during the first phase of a bird flu outbreak in Israel.

Methods: A telephone survey among two randomly selected, representative samples of adults was conducted. One sample involved 500 adult Israeli residents; the other sample involved 103 adult residents from the affected area during the first phase of the outbreak. The use of different sources of information by the population concerning the disease was assessed. The differences in these parameters between the affected area and the nationwide population were analyzed using a chi-square and *t*-test analysis. A *p*-value of <0.05 was considered statistically significant.

Results: Television was a significantly more common source of information in Israel as a whole ($p < 0.05$), whereas friends ($p < 0.05$) and local authorities ($p < 0.05$) were significantly more common sources of information in the affected area.

Conclusions: The frequency of use of the sources of information by the population during the early phase of a bird flu outbreak is different in the affected area compared with the general population in the same country. Authorities must pay attention to this phenomenon and use the correct sources of information in each area in order to achieve better exposure of the population to the recommended behaviors during an outbreak.

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Introduction

In March 2006, a few cases of bird flu were discovered in approximately 10 rural settlements in Israel. As a result, approximately one million birds were destroyed within a three-kilometer radius of the settlement, and authorities instructed the general public to take defensive measures via different sources of information including television, radio, the Internet, newspapers, and the local authorities' information center.

Little is known about the differences in the sources of information use by the population in different geographic areas in the same country during a disease outbreak. Such information can help authorities use the correct source of information in each area in order to achieve better exposure of the population to recommended behaviors during the outbreak.

The objective of the study was to compare the frequency of use of different sources of information by the population in the affected area with the general population during the first phase of a bird flu outbreak in Israel.

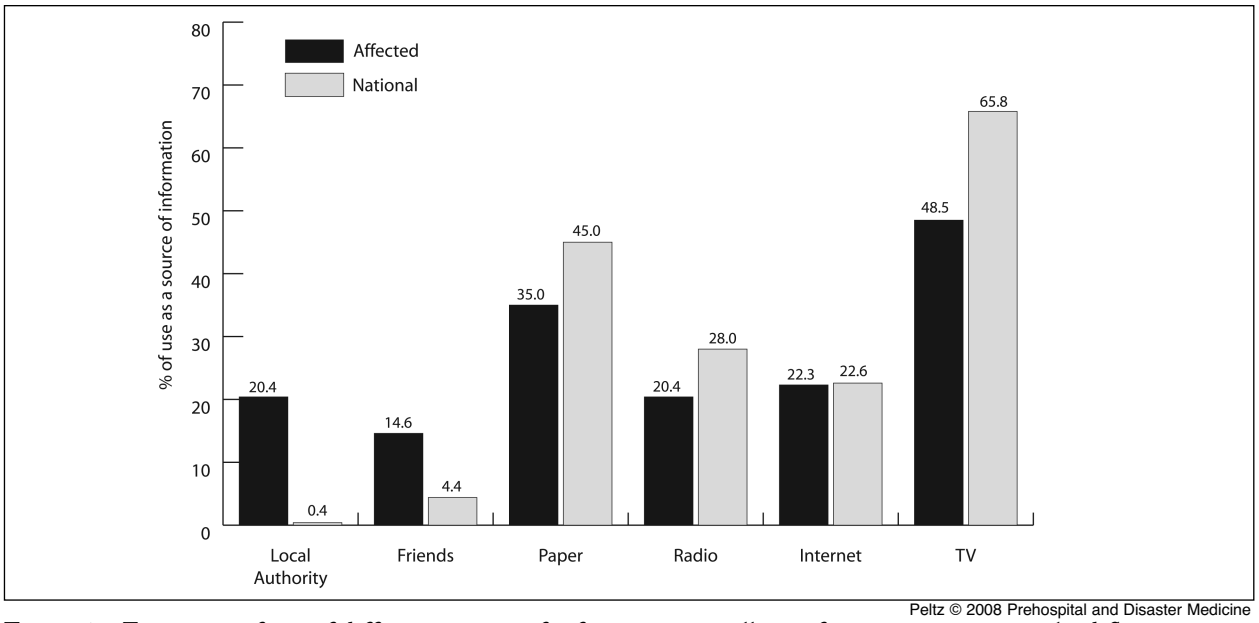

Figure 1—Frequency of use of different sources of information to collect information concerning bird flu among a representative, randomly selected sample of adults in the affected area compared to the national population of Israel

Methods

Data Collection

The data reported in this study are derived from a survey conducted in March 2006 during the early period of an avian influenza outbreak in Israel. The survey was conducted by telephone with randomly selected, representative samples of adults. Trained interviewers conducted the telephone interviews; the median duration of the interviews was four minutes.

The survey sampled two different populations: one sample involved 500 adult Israeli residents; the other sample involved 103 adult residents from the affected area. The size of the sampling error was ±4.5% for the nationwide sample and ±9.8% for the affected area.

Sample

Adults (≥18 years of age) who were at home when they were called were eligible for the study; if two or more adults were at home, one was selected randomly for the interview. At the end of the interview period, 13% of the telephone numbers were determined to be non-working, fax machines, or other such ineligible numbers; 34.2% were unanswered after several attempts. At the end of the interview period, 603 adults were interviewed. Seventeen percent of the people who answered their telephones refused to be interviewed.

Instrument and Key Measures

In order to assess reactions to the avian influenza outbreak, questionnaire items were selected and developed on the basis of prior research and current media reports. The questionnaire contained questions about the source of information used by the population concerning the disease. The differences in the use of different sources of information between the affected area and the national population concerning the disease were assessed.

Statistical Analysis

The differences between the groups were analyzed using the chi-square test. Significant results were determined when $p < 0.05$.

Results

Electronic and print mass media (television, newspapers, radio, and Internet) were the most common sources of information used by the population in the affected and national areas. Television was used as a source of information in 65.8% of the nationwide population compared to 48.5% in the affected area ($p < 0.05$). Friends and local authorities were significantly more frequent sources of information in the affected area compared to the nationwide population (14.6% and 20.4% in the affected area compared to 4.4% and 0.4% in the nationwide area) ($p < 0.05$; Figure 1).

Discussion

The sources of information in the two samples were significantly different—television was a significantly more frequent source of information in the nationwide population (although it still was the most common source of information among the people in the affected area). Friends and the local municipalities (e.g., the kibbutz) were more commonly used as sources of information in the affected area (which contains rural population), compared to the nationwide population where the use of these sources was low.

The importance of knowledge in cases of epidemic diseases has been mentioned in a few papers. Rumor surveillance during an avian influenza outbreak is important in order to enhance a timely dissemination of accurate information to reduce misunderstanding and unwarranted concern.[1] During the severe acute respiratory syndrome (SARS) outbreak in Hong Kong, Lau *et al* noted that in the absence of confirmed top-down official information,

the general public apparently had been forming their own attitudes in a "bottom-up" manner.[2] Media coverage of an infectious disease can be a double-edged sword. On the positive side, the media inform people about how a disease is spread and what precautions to take. On the other hand, because of national and international news coverage of an outbreak, people who are distant from the site of the outbreak can become concerned and start taking precautions as if they were in the affected area.[3] In Singapore, despite >2 months of intensive SARS public education, deficiencies in knowledge and behavior persisted.[4] Public education through the mass media is important (forms of mass media were the most important sources of SARS information), but it remains inadequate. In this case, television, newspapers, and radio formed the top three sources of information on SARS.

Limitations

A limitation of this study is that there could be some confounding factors that might explain the differences in media use in these two populations besides the geographic proximity to the avian influenza outbreak in Israel. The fact that the nationwide population in Israel is mostly urban, and the fact that avian influenza only occurred in rural areas might connect the correlation between the area and the media via other factors that might cause different habits of media use between these areas even during daily life. This was not measured in this study, and therefore, a cause and effect relationship between geographic proximity and differences in the sources of information cannot be determined. However, the fact that there are differences in the sources of information between the areas is important. This can direct authorities as to how to distribute relevant information to these populations in order to reduce stress, increase knowledge, and enhance proper protective behavior during an outbreak of avian influenza.

Conclusions

The frequency of use of the sources of information during the early phase of a bird flu outbreak is different in the affected area compared with the general population in the same country. Authorities must pay attention to this phenomenon and use the correct sources of information in each area in order to achieve better exposure of the population to the recommended behavior during an outbreak. A survey resembling this study should be repeated by the authorities of each country prior to the establishment of public education strategy in a time of an infectious disease outbreak.

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