

Differences in the Sources of Information and Acquaintance with Instructions between Dimona and the General Population after a Suicide Bomber Event

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Abstract

A telephone survey among two randomly selected, representative samples of adults was conducted two days after a suicide bomber event in Dimona, Israel. Television, radio, Internet, and newspapers were more common sources of information in the general population, whereas friends, family, and the local authorities were the more common sources of information in Dimona. Higher acquaintance with police instructions and higher knowledge of the exact location of the event were found in the population of Dimona. 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 target population to the police instructions after a terrorist event.

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Introduction

On 04 February 2008 at approximately 10:30 hours (h), two suicide bombers arrived to the open market in the City of Dimona (a small city in the south of Israel). The first bomber detonated himself in a crowd of bystanders at the open market while inadvertently injuring the second bomber that arrived with him. As a result of the bombing, a woman was killed and 48 civilians were injured and evacuated to the hospital. This was the first terrorist attack in Dimona, which was considered by the population as a quiet and peaceful place to live. The terrorist group that executed the attack is Izzedine al-Qassam Brigades Terrorist Squad from Hebron of the Hamas organization.

The planned adversarial operation was designed and intended to be a double suicide attack with the first bomber detonating himself in an open market, and the second bomber was to target the first responders at the scene. Prior to detonation, the second bomber was identified by law enforcement and based on policies and training, lethal force was utilized to neutralize the threat.

Information about the event was transmitted by television, radio, and the Internet in real-time, and on the following day, the newspapers that had coverage of the event on the front pages. Public Information Centers, which were connected to the hospital computer systems, were opened by the local authority of Dimona and were available for the worried families who were seeking wounded relatives. Immediately after the event, the police instructed the public concerning the proper behavior to protect them from sequential injury, which included staying away from the scene, keeping away from windows and glass, prevent overcrowding, and to obey the police instructions.

A recent study described the sources of information of the population during an avian influenza outbreak. The frequency of use of the sources of information by the population during the early phase of a bird flu outbreak was different in the affected area compared with the general population in Israel. It was suggested that 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.¹

General Population (%)	Dimona (%)	Demographic Parameter
50.1	49.2	Male
49.9	50.8	Female
10.9	16.4	Age 18–24 years
15.1	19.2	Age 25–34 years
19.6	18.4	Age 35–44 years
18.7	17.2	Age 45–54 years
14.7	12.8	Age 55–64 years
20.9	16.0	Age 65+ years
18.0	20.4	Single
68.0	61.2	Married with children
2.3	2.4	Married without children
10.3	15.6	Divorced
68.6	52.4	Born in Israel ($p < 0.05$)
5.5	8.8	Elementary education
39.3	56.4	High school education ($p < 0.001$)
21.7	18.0	Above high school education
32.4	15.6	Academic education ($p < 0.001$)
2.7	2.0	High above average income
16.7	14.8	Above average income
34.6	30.8	Average income
20.2	28.0	Below average income
11.5	12.0	Way below average income
4.9	2.4	Orthodox
12.7	16.4	Religious
31.3	55.6	Slightly religious ($p < 0.001$)
48.4	24.4	Non-religious ($p < 0.001$)

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Table 1—Demographic characteristics of Dimona sample compared with the nationwide sample

Following the police instructions immediately after a terrorist suicide bomber might save lives, especially if the terrorists succeed in their plan of doing a double suicide attack. Therefore, it is important for the emergency managers to be acquainted with the best way to deliver the instructions to the population in real time. The authors are unaware of any research publication that describes the differences in the sources of information used by the population in different geographic areas in the same country in the first two days after a terrorist event.

The objective of this study was to compare the frequency of use of different sources of information and acquaintance with police instructions of the population of Dimona with the nationwide general population two days after the event.

Methods

Data Collection

A survey was conducted in the evening of 06 February 2008, two days after the first occurrence of a suicide bomber attack in Dimona, which is a small city in the south of 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 7.5 minutes. The survey sampled two different populations: one sample involved 428 adult Israeli residents; the other sample involved 250 adult residents of Dimona. The size of the sampling error was $\pm 4.75\%$ for the nationwide sample and $\pm 6.2\%$ for Dimona sample.

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, 16.8% of the people who answered their telephones refused to be interviewed. In 5.9% of the telephone cases that were answered, there was no adult at home. Of the people who answered their telephones, the interview could not be completed in 10.3% because of language difficulties. At the end of the interview period, a total of 678 adults were interviewed.

Instrument and Key Measures

In order to assess reactions to the terrorist attack, questionnaire items were selected and developed on the basis of prior research.^{1,2} The questionnaire was used to obtain demographic data and contained questions about the source of information used by the population concerning the terrorist attack. Knowledge of the details of the event and of the population instructions immediately after the event was assessed using two open-ended questions, three multiple-choice questions, and three 1–5 Likert scale questions. The differences between the residents of Dimona and the nationwide population concerning the terrorist attack in the use of different sources of information, in the knowledge of the details of the event, and in the acquaintance with the police instructions immediately after the event were assessed.

Statistical Analysis

The differences between the groups were analyzed using a chi-square test. Statistical significance was determined at $p < 0.05$.

Results

The demographic data of the two samples is in Table 1. There was a statistically significantly higher percentage of immigrants ($p < 0.05$), lower educational level ($p < 0.001$), higher religious way-of-life ($p < 0.001$) in Dimona compared to the general population. No correlation was found between these demographic parameters and the use of different sources of information concerning the event, knowledge of the details of the event, or acquaintance with the police instructions.

The general population used television (58.4%), radio (44.8%), Internet (21.9%), and newspapers (12.5%) as a source of information than in Dimona, where television (42%) ($p < 0.001$), radio (16%) ($p < 0.001$), Internet (15.2%) ($p < 0.05$), and newspaper (6%) ($p < 0.01$) were less commonly used (Figure 1). However, Dimona residents used friends (31.6%), family (28.8%), and local authorities (8.8%) significantly more often than did the general population, 7.3% ($p < 0.001$), 4.1% ($p < 0.001$), and 1% ($p < 0.001$) respectively).

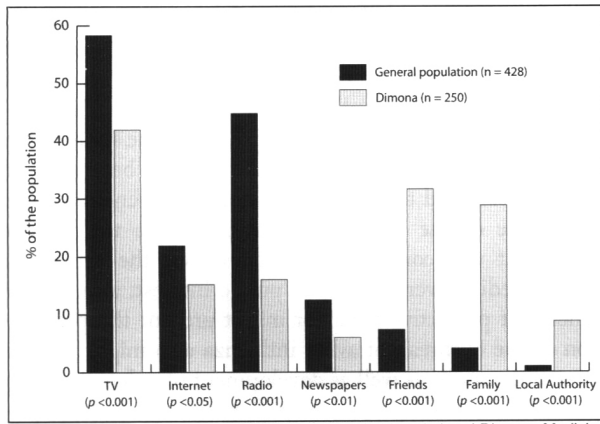


Figure 1—Differences in the source of information concerning a terrorist event between the population in Dimona and the general population in Israel two days after the event

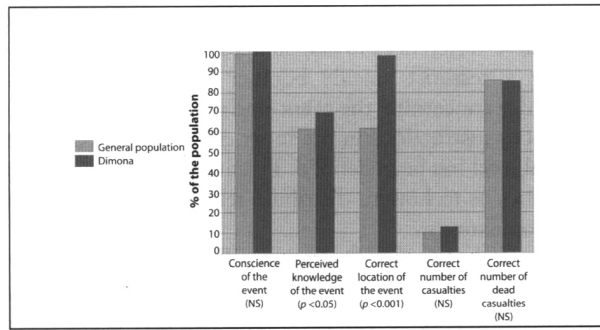


Figure 3—Differences in knowledge concerning the event between the population in Dimona and the general population two days after the event

Knowledge of police instructions was low both in the general population and in Dimona residents. Only 34.3% of Dimona residents perceived that their acquaintance with public instructions was “high” or “very high”, compared to 21.6% of the general population ($p < 0.001$; Figure 2). When asked to retrieve the specific instructions with which they were acquainted, 40.2% of the general population said that they were expected to leave the scene compared to 44% of Dimona residents who retrieved this instruction from their memory. This difference was not statistically significant. Interestingly, Dimona residents had a statistically significantly higher accurate response rate than did the general population of Israel when comparing the acquaintance of the population with the instruction to prevent the scene from overcrowding (18.8% in Dimona compared to 9.7% in the general population) ($p < 0.001$), to keep distance from glass (28% in Dimona compared to 15.8% in the general population; $p < 0.001$), and to obey the security forces (29.2% in Dimona compared to 14.5% in the general population) ($p < 0.001$; Figure 2).

The differences in most of the knowledge questions concerning the event between the general population and Dimona residents were not statistically significant. All (100%) of the general population and 98.9% of the population in Dimona were aware of the event ($p > 0.05$, NS),

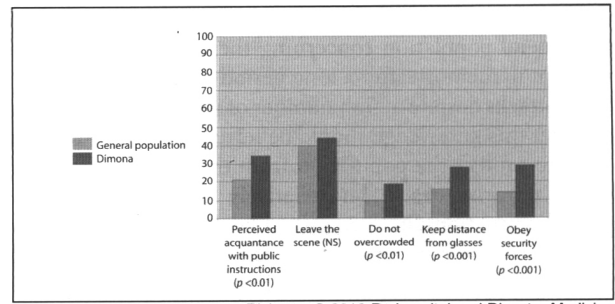


Figure 2—Differences in the population instructions acquaintance of the population in Dimona compared with the general population in Israel two days after the first terrorist event in Dimona

10.2% of the general population and 12.8% of the population in Dimona knew the exact number of wounded casualties in the event ($p > 0.05$, NS), and 85.7% of the general population and 85.6% of the population in Dimona knew the exact number of dead casualties in the event ($p > 0.05$, NS). The only parameter for which the difference between the general population and the residents of Dimona was statistically significant, was the knowledge of the exact location of the event (62% of the general population compared with 98% of the population in Dimona; $p < 0.001$; Figure 3). There also was a statistically significant difference in the perceived knowledge of the general population concerning the event compared with Dimona residents (61.8% of the general population and 69.9% of the population in Dimona perceived that their knowledge of the event was “high” or “very high”; $p < 0.05$; Figure 3).

Discussion

The sources of information in the two samples were significantly different—television was significantly more frequently used source of information in the nationwide area (although, it was still the most common among the people in the residents of Dimona). Friends and families were more commonly used as sources of information in the inner circle secondary to the television, compared to the nationwide area where the use of these sources was low and the radio was the secondary source of information.

In the digital world, relaying information between friends and families is fast, and at times, immediate with the use of texting and SMS services on cellular telephones. Likewise, civilians that were witnesses to the attack will be a part of a wave of information being relayed outwards to family members in effort to confirm their safety and well-being.

The information provided by the local authorities primarily was related to the conditions of the casualties. The local authorities were connected to the computer on line system of the hospitals. This fact might partially explain the differences in the proportion that used the local authorities for information.

The differences in the knowledge of the police instructions might be explained by the freshness of the information that was relayed to the Dimona population as the incident was occurring, as opposed to the general population who had not directly experienced such an incident for a longer

period of time. This suggests that the knowledge gained by the general population concerning the correct behaviors is not kept in memory after a long period of time without terrorist attacks despite a high number of incidents in the past, and that this knowledge should be refreshed just-in-time in order to protect the population from the sequential danger of the terrorist attack. The relatively low awareness with police instructions in a country like Israel that is highly affected by terrorism, emphasizes the need for education of the population of the correct behaviors immediately following a terrorist attack.

From the lessons learned from the bombing during the 1996 Atlanta Olympics, recommendations were published regarding the need for plans and policies that address population evacuation as well as public communications.³ The means to communicate live information to the public at the location of the event as well as to a larger general population must be identified based on the most probable sources of information for the population. In addition to the use of the commonly accessed sources of information, authorities should assure that the information provided to the public is accurate. The television and other sources are not controlled by the emergency services, and therefore, they must plan and practice relaying such information prior to the incident as well as the careful monitoring of the instructions and details of the incident being relayed by the third party communicators.⁴

Emergency management should understand the most effective means to convey information to the population so as to assure that the information is the most accurate and immediate means to minimize additional casualties. Lifesaving measures, to include evacuation from a dangerous environment, could be hampered without an understanding of the sources of information. Close to the scene of the incident, the local population will display a higher level of interest in the events that are unfolding. In turn, the affected population will, in turn, be seeking information from the preferred venues.

The results of the present study coincide with the findings of Peltz *et al* who demonstrated that television was a significantly less common source of information and friends were a significantly more common source of information in the inner circle in the case of the early phase of an avian influenza outbreak in Israel.¹ The fact that social networks are important sources of information in the inner circle in two different emergency scenarios is interesting and further studies should explore the possibility that this phenomenon also might be found in other emergency scenarios. This might help authorities to direct their educational efforts towards penetrating into the population at the inner circle during an emergency scenario using the social networks of that population.

The knowledge of the population concerning avian influenza, the acquaintance of the population with instructions for self-protection against the disease outbreak progression were higher in the inner circle compared with the

general population in the study of Peltz *et al* are similar to the results in the present study although knowledge of instructions of the authorities was higher in the case of avian influenza compared to the present study.² These differences might be attributed to the fact that the study of the avian flu was conducted one week after the beginning of the outbreak, and that the instructions had penetrated the conscience of the population better than in the present study that was conducted two days after the explosion. Better media coverage, higher public interest, and greater belief that protective behavior might prevent the progression of the outbreak of avian influenza also might explain these differences, as well as development of a denial coping mechanism related to suicide bombers attacks in the population of Israel due to the high number of suicide bomber events in Israel during the last decade.

Little is known about the differences in the sources of information used by the population within different geographic areas in the same country during a terrorist attack. The importance of the present study is that for the first time, these differences in the sources of information concerning a terrorist suicide bomber attack, the level of knowledge concerning the event, and the acquaintance with authorities instructions in the inner circle compared to the national level has been defined. This information can direct authorities as to how to distribute relevant information to these populations.

This study has two limitations. The first is that there was a higher percentage of females and of elderly people in the general population sample compared with the previously known demographic data of the Israeli population, and therefore, an analysis was conducted to correct for the gender and age proportions of the sample to match the general population actual characteristics. The second limitation was that the Dimona population differs from the general population in level of education, religiosity, and birth country. These differences could be confounding factors that might interfere with the differences found between the inner and the outer circles of the event. However, there was no correlation between the demographic parameters and the sources of information or knowledge of police instructions, and therefore, the differences can be attributed to the proximity of the population to the event and not to demographic differences between these two populations.

Conclusions

The frequency of use of the sources of information two days after a suicide bomber event is different in the affected cities compared with the general population of Israel. Awareness of the police instructions is higher in the inner circle, although it is lower than expected and must be improved. Authorities must pay attention to this phenomenon and use the best sources of information in each area in order to achieve better exposure of the population to the police instructions after a terrorist event.

References

1. Peltz R, Avisar SG, Ventura-Gabay M, Bar-Dayam Y: Differences in the sources of information used by the population between the affected area and the nationwide general population during the first phase of a bird flu outbreak in Israel. *Prehosp Disaster Med* 2008;23(1):57–59.
2. Peltz R, Avisar SG, Bar-Dayam Y: Differences in public emotions, interest, sense of knowledge and compliance between the affected area and the nationwide general population during the first phase of a bird flu outbreak in Israel. *J of Infection* 2007;55(6):545–550.
3. Sharp TW, Brennan RJ, Keim M, Williams RJ, Eitzen E, Lillibridge S: Medical preparedness for a terrorist incident involving chemical or biological agents during the 1996 Atlanta Olympic Games. *Ann Emerg Med* 1998;32:214–223.
4. Macintyre AG, Christopher GW, Eitzen E, Gum R, Weir S, DeAtley C, Tonat K, Barbera J: Weapons of mass destruction events with contaminated casualties: Effective planning for healthcare facilities. *JAMA* 2000;283:242–249.