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Access for Deaf and Hard-of-Hearing People in the Public Domain: Where Are We?

By: Angela Doden, Jodie Redelsperger, Greg Long

Abstract

The enactment of disability-related legislation does not, unfortunately, guarantee compliance. This is particularly problematic for individuals who are deaf or hard of hearing. These individuals are most often handicapped not by their disability but rather by the unavailability of appropriate accommodations and technology. To address the impact of accommodations within the public domain two studies were conducted. The first study investigated telecommunication accessibility across government, emergency and private business numbers. Results indicated that these entities failed to answer their TTY calls almost 60% of the time. The second study assessed the availability of assistive technology for deaf and hard-of-hearing hotel guests. Hotels were subdivided on the basis of cost (expensive, moderate, and budget). As would be expected, hotels within the expensive category (i.e., \$100+/night) had a significantly greater prevalence of assistive technology for their guests. There were no differences between the moderate and budget-priced hotels. Results from both studies are discussed in terms of their implications for independence, safety, and community participation.

Introduction

Over the past twenty years a variety of disability-related legislation has been enacted to advance the civil rights of people with disabilities and enable them to participate more fully in community life. As R.

Cunconan-Lahr (1991) stated, disability legislation is necessary because:

One likes to believe that humankind has a benevolence that overrides a need for laws that guarantee what one considers natural rights for all individuals. Unfortunately, history has demonstrated otherwise, mostly for individuals who society has labeled different, lesser than, abnormal, and vulnerable, among others. (p. 6)

Many of the laws enacted have emphasized the need to increase environmental accessibility. For example, Title V, Section 502 of the Rehabilitation Act of 1973 (P.L. 93-112) established the Architectural and Transportation Barriers Compliance Board to insure the accessibility of buildings constructed with federal funds. Section 504 of this landmark legislation also prohibited exclusion based on disability of otherwise qualified disabled people from participation in any program or activity receiving federal financial assistance. This law has significant implications for people with disabilities given the vast number of social institutions that receive some type of federal support (Rubin & Roessler, 1995).

More recently, the Americans with Disabilities Act (ADA, P.L. 101-336) included specific titles designed to reduce the impact of environmental barriers for people with disabilities. Enacted in 1992,

Title II extended the protections offered in Section 504 of the Rehabilitation Act of 1973 to all activities and programs of state and local government irrespective of whether they receive federal funds. Title III, also enacted in 1992 and an extension of Section 504, required that public accommodations (e.g., hotels, stores, private schools, restaurants) may not discriminate on the basis of disability.

The obvious intent of disability legislation is to ensure that people with disabilities have the same opportunities to lead independent, productive lives as their nondisabled cohorts. A potential problem arises, however, in that the enactment of legislation does not guarantee compliance. All too often, efforts to monitor and enforce compliance are insufficient to meet the demand. Consequently, many people with disabilities continue to find various businesses, programs, and agencies inaccessible due to their failure to comply with existing legislation.

Environmental accessibility is particularly important for people who are deaf or hard of hearing. These individuals are frequently handicapped not so much by their hearing loss but rather by the lack of appropriate accommodations within their surroundings. Without access to closed captioning, TTYs, interpreters, and/or assistive technology the opportunities to communicate and interact with the larger hearing society are necessarily limited. As an obvious example, consider that most hearing people take the use of a telephone for granted. There is an assumption that a phone call will be answered by

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someone who uses the same communication mode as the caller, i.e., spoken language. In contrast, the majority of deaf people must rely upon the use of a TTY. This is a device that sends an acoustic signal over the phone line that is then processed into a text display on a receiving TTY. Direct communication cannot take place unless the person being called has a TTY and knows how to use it.

To address the issue telephone accessibility, Title IV of the ADA mandated the development and implementation of interstate relay systems. Within these systems the TTY user calls an operator who then places a call to a requested number. Once a connection is made the operator voices the TTY text message, listens for the response, and then types it back for the TTY user to read.

Although the relay system can facilitate access it is not without its shortcomings. The Department of Justice (1991) stated that a relay service does not provide adequate access to all telephone services including: calling automated systems that require touch tone phones; leaving a message on an answering machine within the allotted time; maintaining confidentiality when calling a crisis line; and most importantly, when placing an emergency call when time is of major importance. Because of this, emergency services such as police, fire, and ambulance, are required to have TTY's so individuals can seek immediate assistance.

Another area in which accommodations are particularly important is the hotel industry. The availability of assistive technology within this industry is critical for the safety, convenience, and comfort of travelers who are deaf or hard of hearing. In contrast to hearing people, most individuals who are deaf or hard of hearing are more

likely to be unable to use their hotel room telephones, enjoy watching television, or be alerted to potential emergency situations.

It is hypothesized that people who are deaf or hard of hearing may find the availability and use of accommodations to increase environmental accessibility to be quite limited despite laws to the contrary. As such, the current study sought to establish baseline compliance rates. Though there are a vast array of potential accommodations that enhance accessibility for people who are deaf or hard of hearing, two specific accommodations were investigated within the current study. These accommodations include the use and knowledge of TTYs and the availability of assistive technology within hotels. These accommodations were selected because of their clear relevance in providing opportunities for people who are deaf and hard of hearing to function independently and participate more fully in community life.

To evaluate communication accessibility, a random selection of government, emergency, and business TTY phone numbers were called. It was hypothesized that phone calls to these numbers, advertised as dedicated TTY numbers, should be handled appropriately with little delay or apparent miscommunication. Specifically, government agencies should have years of experience with TTYs given previous federal legislation (i.e., Title V, Section 504 of the 1973 Rehabilitation Act) enacted 20 years ago that encouraged their use. Emergency numbers should be accessible given their obvious relevance to individuals' personal health and safety. Finally, businesses who advertise TTYs as a consumer service would be likely to know how to use their TTYs to enhance

product sales and consumer satisfaction.

To evaluate accessibility relative to public accommodations a random sample of hotels was selected. Ideally, hotels should provide an environment similar to one's home. If people need assistive devices at their home, they would also need them in a hotel in order to perform their daily activities as independently as possible. Particular emphasis was placed on the availability of assistive technology for deaf and hard-of-hearing people. It was hypothesized that there would be different types and availability of assistive technology dependent upon room cost. Specifically, the more expensive the room the greater likelihood that accommodations would be available. This could be of concern due to the fact that people who are deaf often experience more unemployment and unemployment than their hearing counterparts (Christiansen & Barnartt, 1987). If this is the case, they may not be able to afford the more expensive hotels. More importantly, people who are deaf and hard of hearing should not have to use more expensive hotels simply to meet their accessibility needs.

Method

TTY Accessibility

Participants. Ninety Chicago, Illinois area phone numbers were randomly selected from the 1995 Telecommunications for the Deaf, Incorporated (TDI) phone book. These phone numbers were equally divided between emergency numbers (hospitals, police, or fire stations), business numbers, and government agencies. Every third number listed in the Chicago area code (i.e., 312) was selected until the criterion of 30 numbers per group was reached.

Materials and Procedures. Using a TTY, phone numbers were

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dialed during normal working hours. If 12 rings took place without a response the phone was hung up and considered not answered. If the phone line was busy another number was dialed. When a phone call was answered, questions regarding services and/or location were asked. For example, businesses and government agencies were asked about their location, operating hours, and cost (if applicable). Emergency numbers were simply asked to identify their location.

If the questions were answered then communication was recorded as having taken place. If the phone call was answered, but a message did not appear on the TTY screen after a few moments, the space bar was pushed to let the receiver know that the phone call was being placed via TTY. If a typed message still did not appear after two minutes, the phone was hung up and the call was classified as unsuccessful. Occasionally, phone calls were answered by a prerecorded

typed answering machine message. In those cases, no message was left and the next number on the list was called. Calls resulting in busy signals or answering machine messages were not included in subsequent analyses. It should also be noted that respondents were not required to use appropriate TTY codes (e.g., GA, SK) to be considered as having successfully communicated.

Hotel Accommodations

Participants. The participants in this study consisted of 60 hotels located in Chicago, Illinois. Using the standard single room rate for a Friday evening, the hotels were divided into three groups based on cost. Specifically, budget hotels were classified as those costing under \$70/night. Moderate-priced hotels ran \$71-\$100/night and expensive hotels were \$100+/night. An equal number of hotels (n=20) within each price range was contacted.

Materials and Procedures. The 1995 Chicago Yellow Pages Directory was used to randomly select every third hotel listed until

the criterion of 20 hotels per group was reached. Upon calling a hotel, the reservation desk was asked (via voice) the cost of one night for one person. They were then asked if they had the following accommodations available for people who are hard of hearing or deaf: TTYs, closed captioned televisions, lighted smoke alarms, and visual alerts for the phone.

Results

TTY Accessibility

TTY responses were classified in a dichotomous fashion based on whether communication occurred or not. Calls that were not answered after 12 rings or were answered but no communication took place after a two-minute wait were combined. A review of Table 1 indicates that the majority of calls (i.e., 59%, n=53) across all three groups did not result in communication. Although statistically insignificant, a trend for between-group variation was noted in that 73% (n=22) of the calls to government offices were not

Table 1: TTY Responses by Group

Setting	TTY Responses	
	Communication	No Communication
Government offices	8 (27%)	22 (73%)
Businesses	13 (43%)	17 (57%)
Emergency Services	16 (53%)	14 (47%)
Total	37 (41%)	53 (59%)

Chi-square = 4.49, df = 2, p > .05

answered versus 57% (n=17) and 47% (n=14) for business and emergency numbers, respectively.

Hotel Accommodation

Hotels were categorized according to cost as either expensive (\$100+/night), moderate (\$70-100/night), or budget (less than \$70/night). Across each category the following accommodations were identified as to their availability: TTYs, closed captioned televisions, lighted smoke alarms, and phone lights designed to indicate when it is ringing. Separate Chi-square analyses were conducted to assess overall accommodation availability between hotel classifications as well as the availability of specific accommodations between hotel types. A review of Table 2 clearly indicates a significant difference in

terms of overall accommodation availability between expensive hotels and those within the moderate and budget categories. Expensive hotels demonstrated a 77% (n=62) accommodation rate. In contrast, the moderate and budget-priced hotels had a 36% (n=29) accommodation rate.

When specific accommodations were analyzed by hotel type similar findings arose. In three out of four categories (i.e., TTYs, closed captioning, and smoke alarms), the expensive hotels provided significantly greater accessibility. In contrast, the moderate and budget-priced hotels were virtually indistinguishable in terms of their accommodations.

Discussion

The results of these studies would seem to indicate that accessibility and discrimination concerns for individuals who are deaf and hard of hearing are quite salient. It was hypothesized that programs and services that advertize having TTY numbers would be likely to respond to them appropriately. This did not appear to be the case. Despite calling during normal working hours, fewer than half of the calls to government agencies, businesses, and emergency numbers resulted in a successful TTY connection. Government offices were particularly deficient. Fully 73% of the TTY calls placed to these numbers were unsuccessful.

It should be noted that each of the numbers called within this

Table 2: Accommodation Availability by Hotel Cost

Hotel Category	TTYs		Closed Captioning		Phone Lights		Smoke Alarms		Total	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Expensive	19 (95%)	1 (5%)	17 (85%)	3 (15%)	13 (65%)	7 (35%)	13 (65%)	7 (35%)	62 (77%)	18 (23%)
Moderate	7 (35%)	13 (65%)	8 (40%)	12 (60%)	8 (40%)	12 (60%)	6 (30%)	14 (70%)	29 (36%)	51 (64%)
Budget	9 (45%)	11 (55%)	5 (25%)	15 (75%)	9 (45%)	11 (55%)	6 (30%)	14 (70%)	29 (36%)	51 (64%)

Overall accommodation rate:

Chi-square = 36.3, df = 2, p. < .001

TTY availability:

Chi-square = 17.01, df = 1, p. < .001

Close captioning availability:

Chi-square = 15.6, df = 1, p. < .001

Phone light availability:

Chi-square = 2.8, df = 1, p. > .05

Smoke alarm availability:

Chi-square = 6.73, df = 1, p. < .01

study had a corresponding voice number that could be accessed through a relay telephone operator. Thus, individuals who are deaf or hard of hearing could make a connection if they are willing to use the relay system. Using a relay operator, however, takes additional time and decreases the individual's independence and autonomy.

The inability to make a successful TTY call to emergency numbers presents a major cause for concern. In the present study, only 53% of the TTY calls to emergency numbers resulted in communication. The remaining calls either went unanswered or, despite being picked-up, resulted in no response to the caller's TTY signal. Given the immediacy and/or personal nature of most emergency phone calls it would appear that deaf and hard-of-hearing people are at significant risk in these situations.

Needless to say, telephone accessibility is not met merely by having a TTY. People who are unfamiliar with a TTY's operation need to receive training in its use. Occasionally, objections are raised that deaf and hard-of-hearing people rarely call the TTY numbers of public entities. Therefore, why bother? This objection ignores the Catch-22 dilemma inherent in this situation. It is likely that public entities rarely receive TTY calls simply because deaf and hard-of-hearing callers have a personal history of unsuccessful prior attempts.

The focus of the second study centered on the availability of accommodations needed by deaf and hard-of-hearing individuals in hotels. Specifically, a linear relationship was hypothesized between the cost of a room and the availability and variety of accommodations. This hypothesis was partially supported. Expensive hotels (i.e., \$100+/night) consistently reported a significantly higher

likelihood of available accommodations. For example, 95% of the expensive hotels indicated that they have a TTY for their guests in contrast to less than 50% of the hotels within the moderate and budget categories. Overall, there was no difference regarding the availability of accommodations between moderate and budget-priced hotels.

Though these findings are not unexpected neither can they be viewed without concern. Being able to afford hotels costing over \$100/night may not be an option for many people who are deaf and hard-of-hearing. Ideally, there should be no difference between people who are deaf and those who are hearing in terms of their ability to access hotels or any other feature of community life. Accommodations need to be available that are both appropriate and accessible. If deaf people do not have similar opportunities and options as do hearing people then they will continue to be handicapped in their quest for independence and equality.

The TTY study and hotel accommodations study clearly indicate that additional efforts need to be directed toward increasing awareness and compliance with accessibility concerns for individuals who are deaf and hard of hearing. It is suggested, for example, that future research investigate the impact of training and intervention to enhance accessibility compliance. It is also suggested that subsequent studies include a larger sample covering a broader range of accessibility issues. These efforts would help to establish a baseline against which future progress could be measured.

It is also recommended the future studies investigate not only the type of accommodations being offered but also the quality. As seen within the TTY study, merely having a TTY number does not

ensure accessibility. Often, quality remains an elusive factor. It is not enough to have access if one still cannot participate because of the insufficient quality of the access (Rosen, 1992). Minimal accessibility allows only marginal participation. Rosen summarized these concerns succinctly when she said, "If one cannot access or benefit from programs, he or she might as well stay home" (p. 121).

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