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Building Interaction with an Isolated Population through Social Media:

The Deaf Community

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Program in Communication Disorders

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Abstract

The purpose of the study is to discover the effects of social media on the deaf community. Ten individuals, aged from 21 to 29, participated in this study. There was no control for race, ethnicity, or socioeconomic status. An Internet survey was used to gather data. Results suggest that hearing impaired individuals do use social media and that the ways in which is it used varies as a function of degree of hearing loss.

Building Interaction with an Isolated Population through Social Media: The Deaf Community

Since its appearance in recent society, the age of modern communication technology has proven to be both beneficial and disadvantageous to educated civilization. One group of people in particular has experienced this new technology's pros and cons: the hearing impaired. As communication devices such as the television, telephone, and radio, all of which depend on auditory components, came to the forefront of our personal interaction and transmission of current events, deaf and hard of hearing individuals have been isolated from mainstream society (Valentine & Skelton, 2009). As Valentine and Skelton (2009) note in their research, a new form of communication technology, the Internet, has emerged, which gives these said persons the prospect of full engagement and integrated into society.

Deafness is considered to be a very isolating disability because of the atypical language development and use associated with these individuals. Deaf persons do not generally participate in oral language practices, unless skilled in lip-reading. Many hearing impaired people use a specific sign language associated with their culture's native language. Sign language is a very visual and direct form of language, and when trying to communicate with normally hearing people, the hearing impaired must use an interpreter to convey their thoughts, emotions, goals, etc. The use of a third person to convey these messages can alter the intentional meaning. In addition to this, the grammatical structure of a language's sign system is different than the spoken language, so their aptitude of written literacy may lag behind those with normal hearing and development. Even the previously used TTY and relay services are slower and continuous, with the user unable to reply in the midst of the other's message (Bowe, 2002). Internet communications offer solutions to these problems. In addition to the Internet being an

endless supply of information, the use of instant messaging (IM), e-mails, and social networking mediums are an easily accessible and visual means of contact. Although the grammatical aspect of a language's sign system is different from the oral version, the Internet simplifies these aspects, making written literacy easier for deaf individuals to translate (Johnston & Napier, 2010). As a result, this useful means of communication provides a vista of new opportunities for the deaf community. One of those opportunities is the possibility of engagement with a wide range of other people through social media. With it, this group is now able to communicate with others on a level that will not necessarily differ from that of hearing persons. Technologies that support social networking rapidly emerge in today's culture; however, little is understood about how these support the social integration of individuals who are deaf. The purpose of this study is to investigate the strengths and weaknesses of various social media forms available and to determine ways to enhance the use of these to improve the quality of life for individuals who are deaf. Results from this study may provide valuable information that can be used to improve and advance this technology even further.

Review of the Literature

The Isolating Nature of Deafness and Its Effects upon the Deaf Community

Deafness can be a very debilitating condition that erodes the quality of one's life due to its impact on socialization in the general public that depends on verbal communication. Speech is a cornerstone to the interaction of humans, which makes the incorporation of hearing impaired individuals into everyday society somewhat challenging due to the fact that these individuals cannot easily participate in speech communication. Deaf communication is primarily a visual mode, generally transmitted through sign language, written text, or speech reading. Not all deaf individuals possess the ability to speech read, and the majority of society does not know sign

language, wherein lies a communication barrier. The issues that accompany spoken transactions with hearing impaired individuals may lead the general public to exclude these persons from a variety of situations due to the fact that the deaf population is a minority. With the occurrences of failed interaction and exclusion among deaf people come personal problems, such as increased stress in social situations (Ona, Pripp, & Tvette, 2010), which may lead to avoidance of socially demanding situations. Other intrapersonal issues that might arise are limited communication skills and a poor self-image. If deaf individuals avoid social contexts with the normally hearing community, their communicative perceptions of situations may become restricted, thus leading to deficits in interpersonal skills. This can deprive individuals of mental affluence, which is a cornerstone of a richer and more balanced life perspective. Oftentimes, minorities may encounter prejudices and stereotypes when associating with the general public, which can impede upon one's self-esteem and viewed personal value within society. This is certainly a concern with the deaf community. Unpleasant social interactions lead to anxiety, which then leads to avoidance, and in turn creates a self-conscious state of mind, which can end up inflicting more anxiety upon the individual (Keating & Mirus, 2003). This is a persisting cycle of societal deterioration, which one must override to become a thriving social being with adequate communicative skills.

For every child, education is vital to the development of the individual, and this is certainly the same for deaf children. The educational setting in which a deaf child is placed can greatly affect the level of communicative competence a child will have. On one hand, a deaf child in a special educational setting will be less exposed to such integrated conditions than would a deaf child in the normal public education system. These children who are deaf will identify with their deaf community more so than the group of children in an hearing based

education setting. They will most likely lack the familiarity of socializing with the hearing public and age peers, which may in turn result in their exclusion from society. This may result in their becoming more prone to intercommunicative anxiety in social situations and among hearing peers. The impact of social frustration and exclusion upon a deaf child in a normal educational setting can cause long term problems, including delays in typical language acquisition, most commonly in the area of pragmatics and interactive conversation (Keating & Mirus, 2003). When acquiring language, it is common for individuals who are deaf to experience delays in development. As a result, they may have difficulty keeping up with typically hearing and speaking children, which can create further anxiety in school. Keating and Mirus (2003) note that deaf children cannot just simply be placed in a public school setting and be expected to adapt. In order for a truly successful communicative interaction to occur between deaf students and hearing students, both parties must accordingly adjust to diversity and become accustomed to such exchanges for any sort of progress to be made in the area of deaf incorporation into society.

Previous Technological Modes of Deaf Communication

In addition to the quandary of face-to-face interactions among those who are non-hearing and those with typical hearing, communication technologies may present problems for the deaf. According to Valentine and Skelton (2009), with the adoption of technologies based on oral communication such as the telephone, radio, and the television, the deaf community became excluded from society since common channels were less accessible to and adaptable for the needs of the hearing impaired. Many television broadcasts do feature some adaptive features for the deaf, like closed captioning, but these specialized options are far from commonplace in society. Several deaf communication devices exist, such as TTY (Telephone Typewriters), relay

services, and fax machines. Power, Power, and Horstmanshof (2007) examine the benefits and limitations to these primitive deaf telecommunication modes. With TTY services (also known as TDD, or telecommunication device for the deaf), deaf individuals type out messages on a typewriter-like device, and this message is then transferred over telephone lines. A limitation of TTY is that originally these were primarily used for deaf to deaf communication, due to the fact that usually only these persons possessed the corresponding equipment; however, with the assistance of relay services, text to voice conversions are available for deaf to hearing communication, or visa versa. Valentine and Skelton (2009) point out that relay services are a one-way means of communication in which simultaneous conversations are not possible. Faxes were also embraced by the deaf community due to their solely visual quality, yet the main limitation is apparent: like relay services, faxes are a slow, uncoordinated means of conversation, with inadequate two-way communicative characteristics (Power, Power, & Horstmanshof, 2007). All of these rudimentary communicative modes were certainly advantageous to the deaf community and provided their initial steps into the hearing world, but over time technology has provided the deaf with more innovative and favorable means of interaction.

Social Media as a Gateway for Introducing the Deaf Community into Society

Newer forms of social media may bridge the gap between deaf persons and their integration into the general public. One major landmark in the social media scene was the invention of the Internet; with it came great expansion of knowledge (Johnston & Napier 2010) and maintenance of social relations and networking, especially among deaf persons. As Valentine and Skelton (2009) point out, the hard of hearing are now able to keep up with the world by reading about current events, exploring the numerous sources of information, and

retaining relationships. With the anonymity that the Internet presents, deaf persons are able to overcome any prejudices or encountered aversions that may occur in interactions with the general public, giving deaf individuals the opportunity to create unbiased relationships with their hearing peers. The Internet has several mediums of communication available to the user, including e-mail, instant messaging, and videoconferencing, by means of which deaf individuals can communicate effectively with reduced stress or third-person translation (Bowe 2002). Social networking services on the Internet can also provide deaf persons with a less demanding communicative environment for which to make connections with people they might not otherwise have associated with, whether it is of business or personal interest. Also, the general syntactic and linguistic structure of the Internet is more basic to facilitate understanding among a larger range of people due to its simplistic and visual nature. Because many deaf persons are less familiar with written language, the Internet is a more accessible approach for them. The visual approach of this mode of communication translates well with the visual nature of sign, better facilitating the understanding of certain ambiguous situations, such as unlabeled referents. In turn, this exposure to written forms of language presented in everyday situations may enhance deaf persons' lexical and overall syntactic capacity (Valentine & Skelton 2009).

Another mode of communication that has proven to be very useful to the deaf community is that of Short Message Services (SMS), typically made available through mobile phones. Cellular phones are used by most people in America because of the convenience and simplicity in use. As a result, the range of people that deaf individuals can communicate with is expanded. SMS is hybrid of face-to-face communication, previous antiquated communicative devices, and even personal computers with Internet. Messages can easily be transmitted to others via SMS without the stresses of face-to-face interaction. Mobile phones with SMS provide deaf

individuals with the opportunity of communicating with any person at any time and place, something that was previously restricted for them (Power, Power, & Horstmanshof, 2007). With these newer technologies readily available, the social networking radius of the deaf community is expanding into the hearing realm of society.

Preferences of Communication among the Deaf: The Desire to Use Social Media

Though some may consider newer forms of communicative technology useful in the facilitation of social interaction, not all may find it as functional as others in this aspect. As Bowe (2002) points out, the use of e-mail is “effective and inexpensive” (p. 9), making it ideal for a larger group of people. It is also very convenient, due to the fact that one can open and send e-mails according to one’s schedule without worrying about immediate and accurate responses. This reasoning is especially true for deaf individuals because they can respond to others in a manner and moment according to their individual linguistic aptitude. According to Power, Power, and Horstmanshof (2007), many deaf individuals prefer the convenience of mobile phone SMS communication to other modes because of the portability and simultaneous-communicative quality, in turn presenting a sense of interactive equality among hearing peers. Yet many deaf individuals do not prefer to use online and digital communication modes for several reasons. The primary reasons are the inability to actually operate such technology, the reading and writing skills required (Bowe, 2002), and the abstraction of personal identification as a deaf person. Valentine and Skelton (2009) examine the importance of deafness as personal identity (Deafness) versus a personal disability (deafness) among individual deaf persons. Among “little d” individuals, this anonymity available through digital devices may be extremely beneficial, but conversely, “Big D” persons may find it demeaning and impersonal. The distant nature of digital communication, although possibly easier to transmit messages to another, may not be favored

when compared to the personal nature of face-to-face contact, where non-verbal cues and confirmations may be more meaningful.

The literature suggests that more recent technology has been beneficial to deaf and hard of hearing persons. It is also clear from the literature that technology is rapidly changing. The goals of this study are to assess the level of societal inclusion it would appear that technology imparts to persons who are deaf. This study also aims to examine the most preferred modes of communication and to discover the benefits of such methods, as well as the downfalls.

Questions of the study to be answered are:

1. What are the preferred social media tools used by deaf adults?
2. How effective is social media, and for what purposes is it being used?
3. What are some ways to improve social networking for deaf individuals?

Methodology

Participants

Fifty individuals, ages 18 to 30 were sought for this study. A control for gender was used to examine the differences of social media use between males and females. A control for the degree of hearing loss was used to consider the relationship between hearing loss and the extent of social media use. There will be no control for race, ethnicity, or socioeconomic status of participants.

Materials

An electronic survey based on the literature was developed as the data-gathering instrument. The first section of the survey was demographic, i.e., request self-reported information about hearing status, age, and gender. The second section of the survey determined the range of technologies used by participants including TTY, SMS, and social networking sites

or other communicative systems available through the Internet. The remaining portion of the survey consisted of twelve questions intended to assess the general usage and opinions about social networking and technology use.

Procedures

The survey was distributed using Survey Monkey. The e-survey link was sent to various deaf groups throughout United States. The participants were informed that the survey is completely anonymous, and they could withdraw from the study at any desired point in time. The surveys were collected upon completion and analyzed.

Analysis

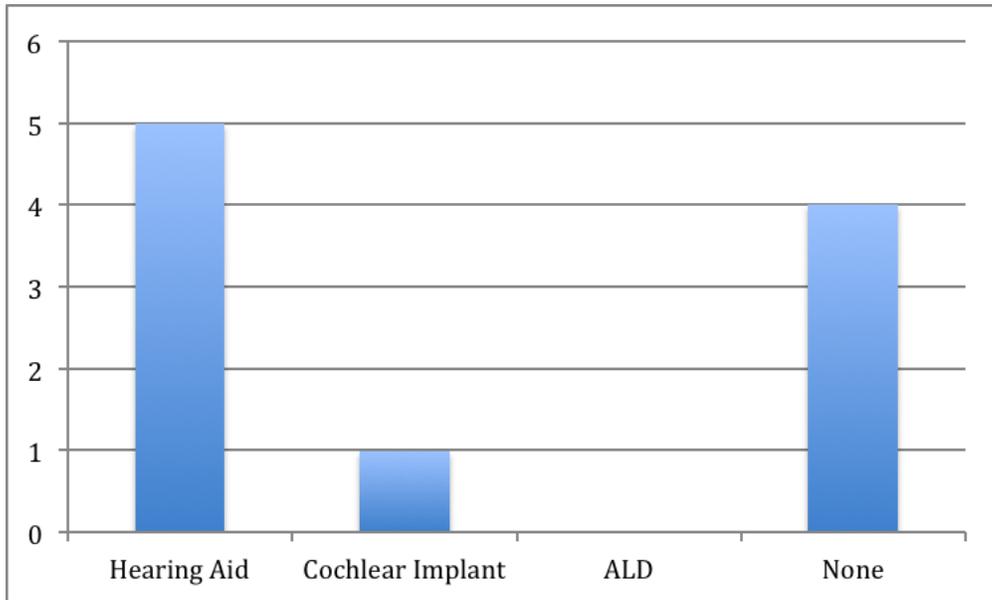
Descriptive analyses were used to determine differences in the social networking of individuals with varying degrees of hearing loss, males versus females, and individuals of different ages.

Results

Summary of Participants

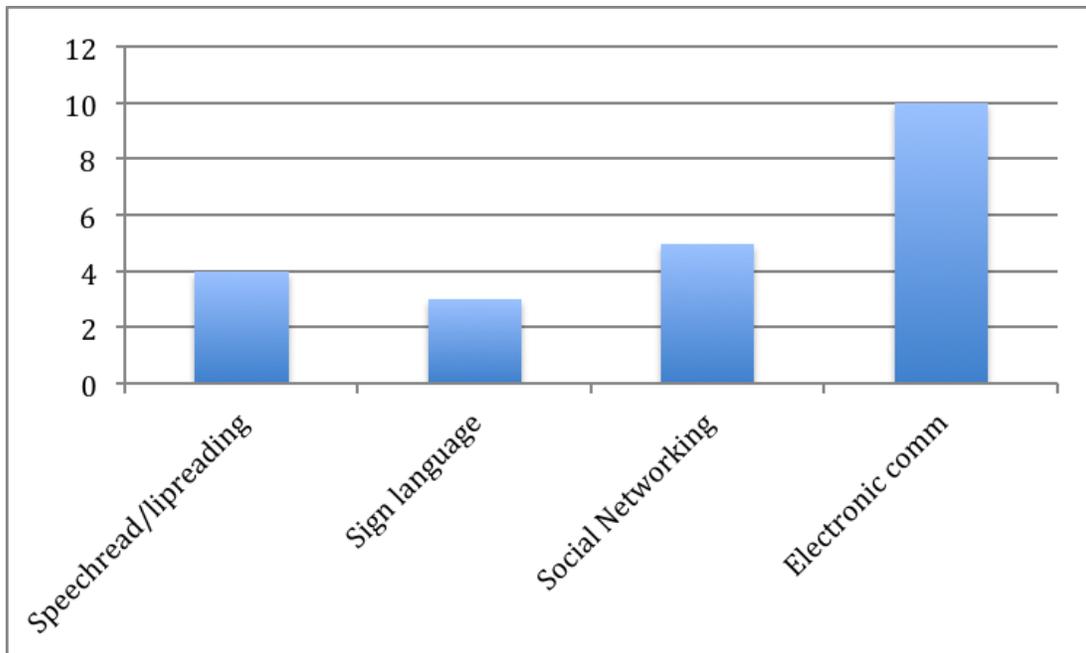
Ten individuals, aged from 21 to 29, participated in this study. Of the participants, four of them were male and the remaining six were female. There were no significant distinctions between men and women in regards to social media preferences and general usage, indicating that both groups are equally familiar with the social media technology options available to them. According to the item number four of the study data, five of the participants regularly used hearing aids, one had a cochlear implant, and four of the ten said they did not use any form of hearing device. None of the participants indicated use of assistive listening devices.

Table 1. Hearing Device Usage



All ten of the participants used various forms of electronic communication (SMS, e-mail, etc.) as a primary means of communication, and five of the ten used some form of social networking media, such as Facebook and Twitter, as shown in the data from questionnaire item five. Four participants indicated use of speechreading/lipreading for communicative means, and three of the participants use sign language.

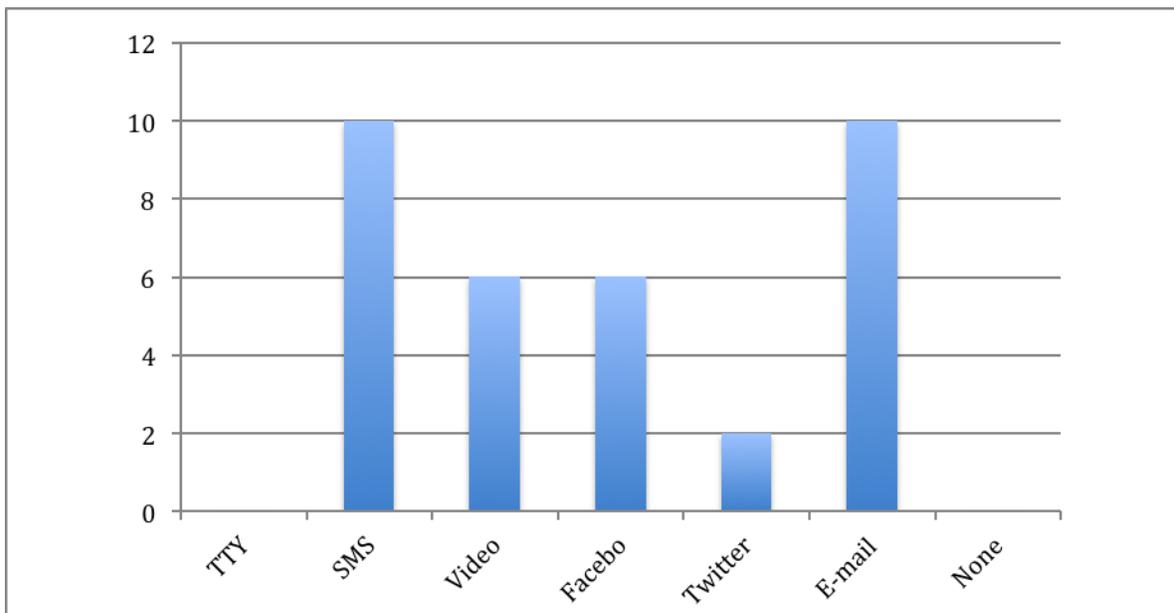
Table 2. Primary Means of Communication



Question One

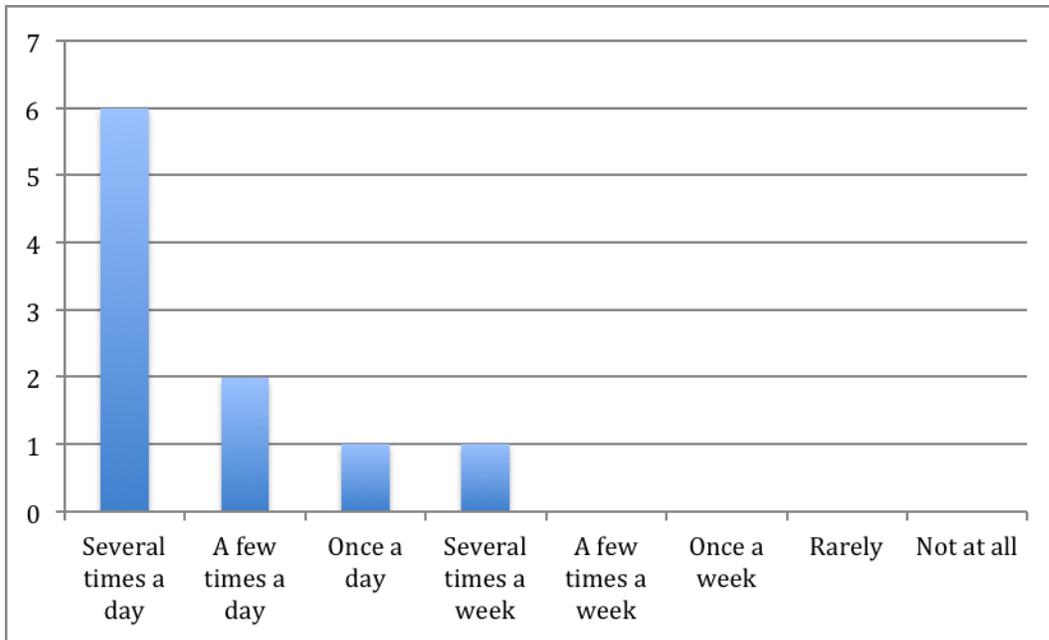
The first question of the study asked what media tools hearing impaired adults prefer to use. Item seven from the questionnaire addressed this study question, and the data shows that all ten participants used SMS/text messaging and e-mail on a regular basis. Six of the participants used online video communication, such as Skype or FaceTime, six of them used Facebook, and two used Twitter. None of the participants regularly used TTY communication or no form of electronic communication.

Table 3. Use of Media Tools



Item six of the questionnaire also pertained question one of the study in that it addressed the average use of social media and other electronic communication. Six of the participants responded with “several times a day”, two used it a few times a day, one used it about once a day, and one used it several times a week. No one used electronic communication fewer than a few times a week on average.

Table 4. Average Use of Social Media



Item nine asked the participants how long they have used social media and other electronic communication, and the answers ranged from ten to 15 years. One participant reported use “since it first came out”.

Question Two

The second question of the study addressed the effectiveness of social media, the purposes for which it was being used. Questionnaire item eight asked the participants what their uses for social media were with an open-ended question. Responses included uses for personal communication, with some specific comments like “talking” and “social means”, business and work related needs, as well entertainment variables. Part of item ten asked the participants what they liked about social media communication. Some commented that it was a quick way to

communicate, and it was convenient to use for communication at a distance. Also mentioned was that social media made the transfer of information easy.

Question Three

The final question of the study asked what some ways of improving the social media experience for hearing-impaired individuals might be. The other part of item ten open-endedly asked the participants what features they dislike about electronic communication and social media. A few responses regarded the occasional weakness of network coverage and the poor quality of real-time relaying services. Others found the meanings and tone found within messages difficult to decipher at times. Other problems mentioned included the unpredictable nature of electronics and the lack of privacy.

Discussion

The goal of this study was to investigate the dynamic between the hearing impaired/deaf community and their uses of social media. As can be see from the data, social media and electronic communication use were commonly used with the sampled hearing-impaired participants. All of the participants used some form of social media, with SMS/text messaging and e-mail being the most prominent forms. All participants accessed social media at least a few times a week, with most using it at least once if not a number of times in a day. These general usage trends did not vary by gender.

From the Literature

Deafness and hearing impairment are often times seen as a restricting condition, as it can create a substantial communication barrier with those of typical hearing status. Data from this study suggests that hearing-impaired individuals often use social media as a significant means of information, expression, and idea transfer. Whether it was short message systems, e-mail, social

networking sites, or audiovisual communication, all participants found some value in social media for communication.

The advancement of social media sources and electronic communication has come a long way since the primitive days of deaf telecommunication modes, such as TTY and relay services. As Power, Power, and Horstmanshof (2007) noted, at one point deaf and hard of hearing individuals were unable to participate in certain hearing-gated technologies, like the radio and telephone, which was why the advent of telephone typewriters and third party relay services were so ground-breaking. Yet the study data showed that TTY technology no longer plays as big a role as it once did. Digital communications took over due to its general ease of use, quickened response time, and two-way communication capabilities. One of the most used forms of electronic communication was e-mail. Bowe (2002) ascertained that this form of communication is convenient in its efficient nature and its virtually non-existent cost. As Power, Power, and Horstmanshof (2007) pointed out, SMS/text messaging is extremely appropriate for quick and easy communication because of its compact, real-time, and individualized qualities, making it a popular choice for telecommunication. The study's finding supported this idea, as every participant unanimously used SMS. Judging by the similar range of initial usage of social media modes, once digital communication became mainstreamed, deaf individuals found use in it as well.

The Internet played a major role in many types of social media sources. E-mail, video communication, and social networking sites are available for general access, all due to the Internet's capabilities. Some participants mentioned the limitations of the Internet's multifaceted capacities, including a lack of privacy and occasional accessibility issues; in regions of lower population and lesser WiFi strength, real-time relay capacities for things such as video

communication are less than desirable. This is also the case for SMS/text messaging, as it is accessed through providers that may be limited in delivering adequate service in all areas.

Technical advances are often accompanied by technological difficulties, unfortunately. Yet every participant used SMS in everyday life because it is readily accessible and relatively simple in nature and use.

Degree of hearing loss played a role in the use or type of the social media used, as the participants reported using electronic media as a primary means of communication. Yet this could have also been attributed to personal preferences as well. Most social media communications are unbiased, as they are popular amongst both hearing and hard of hearing persons. One's identity can be concealed or made known, all depending on the user's desire to share such information. "Big D" social media users can communicate with others whilst continuing to identify with the deaf culture they belong to, and "little d" users can shield their hearing impairment if they so desire. Normally hearing individuals would need to be studied in addition to individuals with hearing impairment to determine the true extent of social media reliance among the deaf and hard-of-hearing community.

Limitations of the Study

One of the limitations of the study was the small sample size acquired. For the data to be more representative of the actual population, additional participants should be sought, especially those with typical hearing. There was also limited information about individuals with more severe hearing loss. Special effort should be made to include a sample from this demographic. In addition, a truer reflection of social media's influence in the deaf and hearing impaired communities needs to include individuals across a greater age range than reflected in this study. The generational differences found between the ages actually sampled, 21-29, and those of older

adults might have lead to different conclusions, as older generations are sometimes less familiar or comfortable with newer technology, and may therefore use social media less. In order to capture this population, paper/pencil surveys may be needed. A third limitation was the lack of cultural diversity found in the study's parameters; although there was no control for ethnicity, the questionnaire was only administered to residents of the United States.

Future Directions

For future studies, a larger, more diverse in age, ethnicity, and degree of hearing loss, sample should be attained to gain a better understanding of the hearing impaired community's relationship with social media. Also, a wider range of social media as well as general deaf-accessible communicative modes, such as closed captioning, should be assessed for general usage and value. A control group of hearing individuals equal in size to the desired population sample should be included to more fully analyze the differences, if any, of social media use between hearing impaired persons and typically hearing persons. To get a better understanding of the actual effects that social media has on hearing impaired persons, a rating scale or system should be generated to summarize the personal level of inclusion within mainstream society that participants may feel. As communicative technology continues to develop, the prospective role of social media will potentially expand the possibilities available to those with hearing loss.

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Appendix A

Electronic Social Media Survey Format

1. Age: [TEXT BOX]
2. Gender:
 - Male
 - Female
3. Hearing Status:
 - Some hearing
 - Little hearing
 - No hearing
4. Hearing aid:
 - Aid
 - Cochlear implant
 - None
5. What is/are your primary means of communication?
 - Speech and lipreading
 - Sign language
 - Social Media
 - OtherIf you selected “other,” please explain. [TEXT BOX]
6. How often do you use social media?

<ul style="list-style-type: none">• Rarely• Once a week• A few times a week• Several times a week	<ul style="list-style-type: none">• Once a day• A few times a day• Several times a day• Not at all
--	---
7. What kinds of social media do you prefer to use?
 - Talk Typewriter (TTY)
 - Short Message Services (SMS)
 - Facebook
 - Twitter
 - Skype
 - OtherIf you selected “other,” please explain. [TEXT BOX]
8. What are your uses for social media communication? [TEXT BOX]
9. How long have you used social media as a means of communication?
[TEXT BOX]
10. What do you like about your preferred method of social media communication? . What would you change?
[TEXT BOX]