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Article

Hard of Hearing Adults' Interpersonal Interactions and Relationships in Daily Life

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Abstract: Globally, there is limited research on how deaf and hard of hearing adults experience higher education and work. The purpose of the present study is to examine hard of hearing (HH) adults' experiences of social interactions and social relationships in higher education, the workplace and leisure time. Data were obtained from semistructured interviews with 16 individuals (aged 24–31 years) from diverse cultural backgrounds (10 males and 6 females) with severe-to-profound hearing loss. Participants were selected based on previous expressed interest in participating in further studies after having been involved in an earlier study. The interviews were subjected to a qualitative thematic data analysis. According to the results, people with a hearing loss experience communication barrier in higher education, at work and in leisure time. These communication barriers lead to difficulties achieving social inclusion, and in some circumstances to social exclusion. Assistive technology (AT) and information and communication technologies (ICT) were important facilitators of moving from social exclusion towards social inclusion.

Keywords: hard of hearing; communication; social interactions; social relationships; higher education; labor market



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1. Introduction

A key aspect of every human being's development is the ability to interact socially. Social interactions and social relationships are of importance for individuals' development of both identity and self-esteem and affect their physical and psychological well-being. Through social interaction we learn to see ourselves based on how others view us [1]. In all forms of social interaction, most of us express ourselves through verbal or non-verbal communication, or both, and the interaction occurs on both a conscious and an unconscious level. When casual social interaction turns into more regular contact, it evolves into a more emotional relationship and the term social relationships is used instead [2]. Communication creates social interactions and maintains social relationships. Our self is formed through communication with others and, according to Mead [3], it is impossible for anyone to grow a self in the absence of social interaction and social relationships. Communication is often based on verbal conversation, which is problematic for hard of hearing (HH) people because the background noise in social environments can impede their hearing [4,5]. According to Cooley [6] one's self-esteem and differentiation from others depends on the person that one is relating to. Cooley's looking-glass concept describes how the self, whether consciously or subconsciously, is always formed in relation to how we believe that others perceive us. Such interpretations derive from interactions mediated by language or other meaning-bearing symbols, which makes verbal communication and interaction with others crucial for the formation of a sound self-identity.

Previous research shows that having a hearing disability limits communication ability, which makes it difficult to have social contacts and thereby potentially creates exclusion in school and at work [7]. Those who are hard of hearing (HH) often feel socially excluded because of the difficulty of communicating with hearing people. One reason for such

feelings may be that it is difficult to have spontaneous social interactions and thereby to maintain social relationships [8]. Research indicates that good social skills are crucial to success in the labor market [9] and in society as a whole [10,11]. People with hearing loss also face barriers including communication complications, and physical barriers and negative attitudes from coworkers [12]. Studies demonstrate that communication stress, social isolation and uncooperative managers are among the complications encountered by many HH workers [13].

One of the main negative impacts of hearing loss is that it impairs the individual's ability to communicate with others and take part in discussions [14,15]. Hearing loss therefore negatively affects social interaction and social relationships. If people with a hearing loss are rejected or feel isolated, their education and ability to work may suffer, which ultimately could lead to mental illness (see, e.g., [16,17]). Digital technology to enhance communication is currently used to reduce some of the barriers that adults and students with hearing disability face in communicating with others [18]. Research shows, for instance, that using assistive technology (AT), which include hearing technology such as hearing aids and/or cochlear implants and information and communication technology (ICT), which refers to all communication technologies (e.g., including the internet, wireless networks, cell phones and computers), web tools is important for achieving full inclusion and social participation [19,20].

Existing research shows, however, that the length of education is shorter among people with disabilities in Sweden than in the general population [21]. People with hearing loss are significantly under-represented in higher education around the world [22]. In Sweden, for instance, only 10–15% of HH students continue studying after upper-secondary school [23], compared to 45%. As many as four out of ten university students report having problems with poor sound environment and difficulties concentrating on, remembering and hearing what the lecturers and others say [24].

Social Relationships and Communication

Forming, developing and maintaining friendships in leisure time can be difficult for any individual. Friendships are characterized by joint satisfaction, shared liking, obligation to each other and intimacy [25]. Friendships could also be characterized by high levels of negative features (e.g., conflict and rivalry) but also positive features (e.g., loyalty, intimacy and self-esteem support). These positive features are important factors for developing good social-emotional skills [26], and high-quality friendships have been found to be an essential protective factor against being bullied by peers [27]. Friendship does not come easily and staying in touch with friends is more challenging for people with hearing loss or deafness than for others [28]. People with hearing loss usually have fewer friends than their hearing peers, and their friendships are of lower quality [29]. Communication problems are one of the barriers that HH face when establishing friendships with hearing people. Misunderstandings and intolerance characterize conversations between HH and hearing people, and such complications have been shown to result in people with hearing loss having fewer social relations [30–32]. Information and communication technologies (ICT) such as smartphones, tablets, the Internet (e.g., Facetime and Skype) and social networking sites (e.g., Facebook, Instagram and Twitter) have become essential for HH people's ability to interact with friends in social forums [33]. Another essential tool for interaction is assistive technology (AT), which consists of all kinds of tools, devices or systems that allow a person to perform a task in an easier and safer way. ICT and AT are vital for HH people to have the opportunity to be included in different social contexts such as school, work and socializing with friends, thus allowing them to fully participate in society, education and the workplace [34].

Hearing loss is a growing, global public-health problem. According to WHO [35], there are presently 466 million persons with hearing loss in the world. This is predicted to rise to 630 million by 2030, and the proportion of persons with hearing loss is increasing in all age groups [21]. In Sweden, there are approximately 712,000 deaf (D) or hard of

hearing (HH) people who are of working age (16–64 years), which amounts to 12 per cent of the Swedish workforce [21,36]. Despite this, most studies about hearing loss concern HH children's experience of social interaction and social relationships with their hearing peers in primary school [37–39], while international research concerning how HH students experience higher education [13] or about relations between adults at work [40] is limited.

Given the knowledge gap that exists regarding the difficulties that HH adults face when entering higher education and working life, and the crucial importance of being able to communicate with others to maintain social interaction and social relationships, the aim of this study is to examine HH adults' experiences of social interactions and social relationships in higher education, working life and leisure time.

The following questions are posed:

- How do HH adults experience social interactions in higher education and at work?
- How do HH adults experience social relationships in their leisure time?
- What opportunities and challenges do ICT and AT present to HH people in their daily life?

2. Materials and Methods

This study is a qualitative study of HH adults' experiences of social interactions and social relationships in higher education, working life and leisure time, conducted in a Swedish city with approximately 120,000 inhabitants. The study is part of a thesis about living conditions and life experiences of young men and women who are hard of hearing. Semistructured interviews were used to elicit experiences from people with HH. This approach is adopted in accordance with the aim to gather rich and descriptive information and an emphasis on eliciting the individuals' own understanding of their experiences [41].

2.1. Participants

Participants in the current qualitative study were selected from an earlier qualitative study, which investigated how they, as children, constructed their identity and interacted with peers at school [36]. After that study, they were asked if they were interested in being interviewed again and were offered opportunities to be included in similar studies later. All 29 participants expressed an interest in participating again in 2003, but in 2011 and 2012, only 16 of the original 29 participants agreed to be part of this study.

The 16 participants (10 male and 6 female), aged 24–31 years, had severe-to-profound hearing loss. The participants referred to themselves as HH, and all of them had been diagnosed by the public health system as a child. Despite this, the participants were selected based their participation in the earlier study, and because of their knowledge about living with hearing loss, not from audiometric evaluations. Table 1 shows further demographic characteristics of the participants.

All of the participants have different needs for communication access depending on their individual needs and contexts. All participants were prescribed hearing aids and could easily have a face-to-face conversation with one person with the help of assistive listening devices (ALDs), which help them amplify the sounds they want to hear, especially where there is a lot of background noise. However, they also relied on their lip-reading skills to be able to follow a conversation. Being able to see the speaker was therefore crucial for their hearing and understanding. During the interviews, the participants were able to communicate in face-to-face situations and in environments free from sound disturbance. They all were offered to use sign language, but they declined. No one was a cochlear implant (CI) user at this time but three of them talked about wanting to have a CI in the future. They describe that in their home environment they use AT devices as augmentative and alternative communication (AAC) devices, which help them, for example, by synthesizing speech from text, and also function as alerting devices connected to their doorbell and telephone, so that a blinking light lets them know when the doorbell or telephone rings. In other environmental settings, they depend on hearing loops and FM systems. The participants revealed that if they are together with others with hearing loss,

they use oral and sign language to communicate, but with hearing people they only use oral communication.

Table 1. Background of the informants.

Informant	Age	Gender	Impairment	Occupation	Marital Status
1	27	Male	HH/profound	Installation electrician	Common-law spouse
2	28	Male	HH/severe	Confectioner	Single
3	30	Female	HH/profound	Enrolled nurse	Married
4	26	Female	HH/profound	Carpenter	Girlfriend
5	27	Male	HH/severe	Teacher	Common-law spouse
6	30	Male	HH/profound	Car salesman	Single
7	31	Male	HH/severe	Car salesman	Girlfriend
8	26	Female	HH/severe	Business assistant	Single
9	26	Male	HH/profound	University student	Common-law spouse
10	24	Male	HH/profound	Online salesman	Single
11	30	Female	HH/profound	Office assistant	Single
12	26	Female	HH/severe	Enrolled nurse	Boyfriend
13	30	Female	HH/severe	Business assistant	Common-law spouse
14	31	Male	HH/severe	Business assistant	Common-law spouse
15	26	Male	HH/profound	Enrolled nurse	Common-law spouse
16	27	Male	HH/profound	Student in municipal adult education	Single

All the participants had a background of attending mainstream schools and special schools for the deaf and hard of hearing. All 16 participants had hearing parents and siblings and some of them had a mother or a father who learned sign language. All the participants were employed, except for two who were students at this time, one at the university and one as a student in municipal adult education. Five of them had taken one or two university-level education, so six of them had experienced course in higher education at some extent. The remaining 10 had high school and/or vocational education. Six participants were cohabiting with a partner (see Table 1). Two of the participants had hearing children.

The interviews were designed to assess the participants' perceptions of themselves and their relationships with family, friends and partners. A semistructured interview guide was used consisting of open-ended questions that allowed for asking follow-up questions. The interview guide was a modified version of the "Cornell interview of children's perceptions of friendships and peer relations" (CIPF), which was translated and adapted to Swedish conditions and to adults [42,43]. The questions from the CIPF instrument concerned the participants' social relationships with friends and whether they have a partner.

The interview started with questions about their hearing loss: "How long have you had your hearing loss?", "How old were you when someone discovered your hearing loss?" and "Describe your hearing loss and its effect on your life as a whole". The interviews were designed to evaluate the participants' perceptions of themselves and their relationships with family, friends and partners ("Is someone in your family members hard of hearing?" and "Any of your friends or partner?"). The interview guide included background questions related to hearing loss or communication modes in the family ("How do you speak with family members?" and "Do you use sign language in your family?"). Questions also about their identity and technology (e.g., the internet) use and employment and relationships (friends, social contacts and partners) ("Describe how you navigate your hearing loss in day-to-day such as in school/work/social life, with a friend through the internet"). There were also questions relating to relationships, such as perceptions of friendships, self-esteem and social abilities.

2.2. Procedure

Interviews were conducted letting each participant using their preferred mode of communication (spoken Swedish or Swedish sign language). They all chose spoken

Swedish. All interviews were prepared, conducted, tape-recorded and transcribed in full for analysis by the first author. The first author had access to HH people who had been involved in earlier studies with a co-researcher. At that time, the participants had expressed interest in participating in further studies. A total of 25 participants from the earlier study were contacted by short-message service (SMS) by the first author; of these, 16 agreed to participate, and nine could not or did not want to participate. The 16 interviews were conducted in locations chosen by the participants themselves. Most were conducted in a secluded room at the university in their hometown, but some of the interviews were held in their home environment, at a restaurant or at their workplace, all depending on the preference of the participants. All the interviews were held in places with a hearing loop so that even those with severe to profound hearing loss could be able to participate. The 16 interviews ranged from 78 to 128 min depending on the amount of detail the participant was willing to share. The participants used spoken Swedish as their main form of communication and no sign language was used in the interviews. All interviews were organized, conducted, tape-recorded and transcribed in full for analysis by the first author. In order to protect the participant's identity, the recording and transcriptions did not have any identifiable information in them.

2.3. Analysis

Thematic analysis was used to identify, organize and offer insight into patterns of meaning (themes) across a dataset by using following six steps: (a) familiarizing yourself with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing potential themes, (e) defining and naming themes and (f) report writing [44]. The identification of themes for thematic analysis had a theoretical approach from a looking-glass concept, viewing that the participants have an active part, which they must show and perceive how they are observed by others [4]. Since the purpose of the study was to examine HH adults' experiences of social interactions and social relationships in higher education, working life and leisure time, the thematic analysis was selected. This method of analysis is open and flexible, and is suitable for a data-driven analysis focusing on the data as a whole, which gives the reader a rich and general picture of the experiences, meanings and the reality of participants [44,45]. The first author (S.O.) read through the interviews repeatedly to get a general understanding and an overview of the data. In parallel with the reading, parts of the texts were underscored, and repeated codes were noted down in the text as patterns. These patterns were then categorized based on what they represented, for example higher education, work and friendships. This process was conducted individually for each interview. Then the other authors read approximately 8–10 of the interviews and a codebook was conducted for the analyses. The codebook described the contents, structure and layout of a data collection. The authors created a list of concepts based on those found in the research question. Using the looking glass framework, the authors worked through the interviews and uses codes in the text according to the theoretical perspective. Then the authors use scores, 1 if the same codes were chosen by two or more authors or 0 if different codes were chosen by two or more coders. All the authors had the same code definitions when reading the data set for the intercoder reliability (ICR). The definitions specified what the codes include (e.g., participants' experiences such as facilities and obstacles for social interactions and social relationships in higher education, work or friends/partner) and what they exclude (e.g., information that did not contain social relationships at all). The authors wrote the code name in the Word document as a comment in the right-hand margin. Then, the authors compared the codes and discussed coding problems where there were discrepancies and misunderstandings. At first the codebook was too complicated and confusing to understand, so the codes were revised again. Once the entire document for a single participant was coded, all the data were read through once again, interesting characteristics were coded methodically, and all the codes and quotes were collected in a Word document to develop an appropriate set of data linked to the specific aim. ICR was calculated as the number of agreed codes over the total number of codes in the document.

In the thematic analysis step two the codes were then gathered on the basis of similarities and variances. The codes (e.g., loneliness, group discussion and friends) that had comparable senses were then gathered and established as possible themes, supported by quotes taken from the interviews. In step three, searching for themes, codes covering the same themes focusing on social interactions and social relationships based on school, work and friendship were gathered into inclusive themes. The codes were underlined with comments to highlight aspects that were interesting in relation to the aim of the study. This was performed through an ongoing process of verifying the reliability between the codes and the themes they were gathered under, and between themes and the entire data set, to make sure that there was a comprehensible relation between codes and themes. In step four the thematic analysis involved sorting and collecting all the potentially relevant coded data extracts into potential themes [44]. These chosen potential themes were then refined into themes that were more precise yet wide enough to capture the essence of the data. The last step in the thematic analysis resulted in two themes: “Obstacles that hinder social relationships in education and at work” and “The importance of having social relationships in leisure time” (see Table 2).

Table 2. Themes and categories that emerged from the analysis.

Themes	Categories
Obstacles that hinder social relationships in education and at work	Group discussion as a barrier for social interaction in higher education Communication barriers lead to exclusive feelings at work
The importance of having social relationships in leisure time	The need for friends and a partner Initiating and maintaining social relationships with the help of AT and ICT

The two themes are based on four categories that emerged from the question about how HH people experience their social interactions and social relationships. The first theme, “Obstacles that hinder social relationships in education and at work”, was based on how the participants experience the social interaction at their place of higher education and at work, and also included how difficult communication could be for HH people when they interact with hearing people. The first category in that theme, “Group discussion as a barrier for social interaction in higher education”, highlights the obstacles to communicating in larger groups, and the obstacles to being included in groups of hearing people in school. The participants may be able to communicate and understand if they converse with one person in a quiet room, but the same person may have great difficulty understanding during a group meeting, when several people are talking, or where there is background noise. The second category, “Communication barriers lead to feelings of exclusion at work”, describes the participants’ experiences of feeling excluded from social activities at work. Successful social interaction at work largely depends on the willingness and ability of employers and coworkers to identify and resolve communication barriers in the workplace.

The second theme, “the importance of having social relationships in leisure time”, had to do with social contacts in the form of friends and partners at school, work and in leisure time. One of the categories in this theme, “the need for friends and a partner”, focuses on the difficulty of making new friends and on participants’ feelings of loneliness. The last category, “initiating and maintaining social relationships with AT and ICT” points to the importance of both AT and ICT in initiating and maintaining social relationships. People with hearing loss expressed that they had better social interaction with all of their friends through online modes of communication.

The presentation of the results is based on the participants’ own experiences. Each theme starts with a summary of the main findings and results. All participants were assigned numbers instead of names to reduce the risk of compromising their anonymity.

2.4. Ethics

The Regional Ethical Review Board in Uppsala, Sweden, approved the study (FAS dnr 2006-0888). Throughout the study, the ethical principles of the Swedish Research Council were followed [46].

2.5. Credibility and Transferability

To attain trustworthiness in qualitative studies it is important to have transferability and credibility [47]. First, preinterviews were done to help to determine whether the interview questions were suitable for obtaining rich data that answer the proposed research questions. In this study, the credibility of analysis was enhanced by having all the researchers analyze all the interviews. Throughout the coding process, participants in the research group discussed their thoughts and ideas, and the data were analyzed and discussed until consensus was reached. To achieve intercoder reliability (ICR) in the data set, the research team developed a codebook with key words generated from the data, as opposed to using a predefined set of categories or codes. Using this codebook in the coding of each of the 16 interviews was a time-intensive but essential initial step to safeguard the trustworthiness and quality of coding during the stages of data analysis.

In the whole interview process an evaluation were done continuous reflection to ensure the trustworthiness of the content analysis by asking question such as “Did my questions lead the participant?”. Credibility was also achieved by letting the participants read the interviews and discuss the results with the first author. In the present study, to enhance the credibility, data were collected and analyzed taking the context into consideration. To enable readers to assess the study’s transferability, the process of the analysis is described in detail.

3. Results

The participants expressed experiences of being lonely at school, at work and sometimes at home. When this topic was raised, it emerged that all the participants at some point in their life have experienced isolation from the people around them. However, they have also found different facilitators of establishing social interactions and maintaining social relationships. Regarding the first research question, “How do HH adults experience social interactions in higher education and at work?”, there were one theme that occur “Obstacles that hinder social relationships in education and at work”. That theme highlights the communications barriers for HH when they have a discussion with more than two people at the same time.

3.1. Obstacles that Hinder Social Relationships in Education and at Work

All participants reported obstacles to interacting with other students and colleagues. Often this depended on the noise level in the surroundings and the inability of hearing people to communicate effectively with HH people. The essential aspect, both in school and at work, was the feeling of exclusion, especially at lunch, during breaks and in larger groups.

3.1.1. Group Discussion as a Barrier for Social Interaction in Higher Education

The participants reported difficulties with social interactions and relationships at school. Almost all of them described wanting to make new friends at school and interact with the other students but finding that they were hindered by the difficulty of communicating with hearing people. For example, participant 16 explained the difficulty of communicating during breaks in school. If there is a coffee or lunch break, it is expected that everyone will be social and communicate with each other. “In school when we had breaks and we were sitting around a table, it was all just talk, talk, talk, and I understood almost none of it”. The participants expressed that the most difficult thing is to have a conversation with several people at the same time, especially when several hearing people are talking and do not make eye contact or reduce their speech tempo. The participants

also reported getting very tired of all the background noise, and that being around people talking all day was exhausting. They said that above all they are disturbed by the sounds of other people, for example voices, footsteps, scraping chairs and other noisy activities.

People with a hearing disability need to be able to lip read in addition to relying on their hearing aids. The participants described the importance of communication and expressed that they often feel excluded from social contacts because of the lack of communication: "If there are several people in the room and maybe you're working on a group project, it's impossible to keep up" (10). "If you're in a large group then, no, I can't really hear" (13). These citations show that the participants experience situations where they feel uncomfortable. The participants spoke of their hearing loss as an obstacle to participating in education when they need to sit and discuss in groups. The size of the groups is important, as most of the time the participants described it as difficult to join a discussion if there are more than two persons. In such cases the participants prefer to take a passive role, being an observer instead of an active participant in the larger group. They expressed that they want to be included in groups, and that they initially tried to be more active and take part, but when they could not hear and had to ask repeatedly, they finally switched to a passive role. Everyone in this study reported the complications caused by telling hearing people that they could not hear, and that they felt embarrassed about repeatedly having to ask what someone has said. Situations like that led to HH individuals choosing to exclude themselves from communicative situations. They expressed that this limitation arises in every school situation where you must socialize with others, because communication in larger groups is too difficult to handle and these situations often lead to other issues as well: "It is exhausting to constantly have to make an effort to hear people talk. I get so tired of trying to listen. It's hard to keep up in discussions both inside and outside the classroom" (1). This quote explores how the effects of hearing loss hinder some of the social interaction, and why it is essential to take breaks, given that it is so exhausting to try to keep up with lectures and discussions. Sometimes they just go directly home and sleep after a day at school, and such behavior excludes HH people and makes them unable to participate in various social activities. It also shows how communication barriers hinder social relationships. In an ongoing conversation, these difficulties with hearing could exclude the participants from the rest of the group, and this in turn can lead to loneliness. The need to socialize with others is mentioned by several of the participants as important.

3.1.2. Communication Barriers Lead to Feelings of Exclusion at Work

To facilitate communication between HH and hearing people in the workplace, it is important to have a functioning workplace for everyone. Several of the participants experienced communication barriers at work, just as they experienced in the mainstream school environment. Participant 16 explained that the difficulties do not only concern communication while working, but that one can feel excluded from social relations even during breaks. Those who had experienced some form of exclusion at work attributed it to their disability. They stated that their colleagues find it hard to communicate with them and that they themselves have difficulty following conversations, and that this leads to being a passive listener. Some of the participants spoke about how at work hearing people do not understand the practical effects of having hearing loss. Just because in the right environment most of the participants can hear some words, many of their coworkers think that HH people are able to hear everything in a conversation. However, the participants expressed feeling ashamed of continuously having to ask their coworkers to repeat themselves, and finally pretending they can hear. In addition, people with hearing loss can get an excluded position in relation to their colleagues during breaks and at lunch, and some colleagues can even be rude or ridicule them. Participant 9 described how a colleague had made fun of her:

“I had a work colleague a few years ago who reacted so strongly because I was HH. She joked that I could not hear, and she said I should adjust my hearing aids, that I should change the batteries. It really hurt my feelings.” (9)

This quote depicts one incident among many that participants had experienced. Participant 9 described having difficulty socializing when there are communication barriers and the participant wonders what her colleagues are saying and whether they are talking about her. It appears from the interview results that some of the participants encounter hostile, negative or discriminatory attitudes in the workplace because of their hearing loss. Some coworkers would make fun of the participants’ hearing loss if they misunderstood or repeatedly asked what they had missed. As a result, this participant (9) got upset, lost her self-confidence and finally gave up on having social relationships at work. Participant 9 expressed that negative attitudes, misconceptions or prejudices against her were commonplace at work. This was an ongoing behavior from this colleague. This colleague would take every chance to say something about the hearing loss. Almost all participants had similar experiences to report from different workplaces. They said that many social situations at work had created these feelings: “an inside joke we’re not a part of” and “not being invited to an outing that other colleagues are all attending”.

For many of us, these are isolated experiences of not belonging, but for some people, they are daily occurrences that have a compounding effect. The interview results show that communication difficulties can lead to conversation gaps or other challenges affecting social relationships. Communication barriers may make it difficult for the HH individuals in this study to participate appropriately at work, which in some cases can lead to isolation and exclusion. Choosing something they feel secure doing seems to be of great importance to most participants. Rather than trying something new, they prefer to do something that they have already mastered, for example, a job that requires the skills of sign language. Sometimes they challenge themselves to try different kinds of work, but in some cases the hearing loss forced them to change jobs:

“I worked as a personal assistant before. And once I had to help the taxi driver with an address. And they love to talk, but I was in the back seat and couldn’t hear anything. And that was hard, and I had to quit that job because it makes me feel so bad.” (4)

The above quotation depicts a situation where hearing loss affected verbal communication by having an impact on the participant’s ability to follow a conversation. Unaware of her hearing loss, the taxi driver tried to communicate with her, but the discussion ended abruptly when she did not respond. It is clear from these examples that not being able to relate to others and to take part in social interactions can directly affect a person’s life, as in this case. Being excluded from such social relations can lead to other issues, such as feeling unable to handle a work task, as the participant expressed in the quotation above. Additionally, these kinds of situations at work finally led to her quitting her job. In all these situations where the participants have to interact socially without being able to use sign language, they often experience it as bothersome to be the person who is responsible for upholding a good working climate and having to repeatedly remind colleagues about the communication barriers and the best way to communicate with them.

To summarize this section, the major challenges for HH people arise when interacting with more than two hearing people. Communication is vital to social interactions and healthy social relationships; without the ability to communicate effectively, the participants often experience feelings of unhappiness, loneliness and social exclusion at work.

3.2. The Importance of Having Social Relationships in Leisure Time

The second research question: “How do HH adults experience social relationships in their leisure time?” highlights the importance of having friends to turn to and also having a partner who understands you. All participants expressed that friends and partners are very important to them. A lack of social contact translates into loneliness and a longing for social relationships, both at work and in one’s free time. It was common to have childhood friends or to share partners’ friends. The categories for this theme are as follows: “The

need for friends and a partner” and “Initiating and maintaining social relationships with AT and ICT”.

3.2.1. The Need for Friends and a Partner

Regarding friendship and socializing, most of the friends and partners that the participants in the study have over the years are also HH. As Participant 2 put it, “My friends are HH, practically all of them”. They said that they choose to be with others who are HH because it is easier to socialize with HH people, as they know how to use sign language. One participant stated the following: “It’s probably easier if you understand each other. There are a lot of benefits, just like for immigrants, of understanding each other’s culture, upbringing, schooling, work, everything” (4).

Everyone feels alone now and then, but many participants felt both social and emotional loneliness. Social loneliness and isolation indicate the absence of a social network, that is, having few friends, coworkers, family members or relatives to socialize with, or none. In many cases the participants described their experience of loneliness as not a question of having too few friends, but rather of having no friends at all: “I feel lonely. I’ve been sitting at home for three years” (6). “No one that I hang out with regularly. One of my classmates from elementary school moved back here. He and I have met up now and then” (1). Another participant thought that his solitude was because he had been alone all his life and that it had become a part of his self-image: “Yeah, I don’t know. I think it stems from the fact that I’ve been alone quite a lot since I was a child. That makes you think that people do not want to hang out with you”. The participants frequently reported that they did not make any new friends after primary or upper-secondary school. The few participants with higher education said that they find it hard to create any new friendships in higher education. The few who had acquired new friends described the new friends as work friends, not leisure-time friends. The friendships they did have begun in school together with others with hearing loss and continued with contacts that have been maintained throughout late adolescence and now into young adulthood: “All my friends are HH. They’re who were in the class” (10). Another participant said, “I’ve kept my friends that I had in school. Yes. It keeps us together. I keep in touch with them” (2). Another participant stated, “I do not hang out with friends in my spare time” (11). Another participant had some friends, but no one with whom to share his or her innermost thoughts. An experience that almost all the participants expressed was they have very few or no close friends to share their deepest feelings with; mostly they have superficial contacts. These findings reflect, and may explain, why the participants feel a type of social isolation. It becomes a kind of loneliness and sense of dissatisfaction because something is lacking and occurs when they do not have the level of social contact they desire. It emerges from the interview results that these HH people were not expecting to have social relationships with other people than their coworkers. Therefore, socializing would occur strictly at work with coworkers: “I do not hang out with anybody. I only see the co-workers that I work with...” (14). Participant 11 expressed having friends only at work: “They are my closest friends, my only friends”.

All the participants in this study have had a deaf partner or a partner with hearing loss. Some of them have had hearing partners. All of them pointed out some of the big issues with having a hearing partner. For instance, even the slightest acts of communication, even those generally considered insignificant, build closeness and connection between partners. Those minor interactions, including jokes and humor, bring about joint companionship. All the participants who have dated a hearing partner expressed that they experience the absence of that sort of communication as a significant lack in their relationships.

On the other hand, those who have had a hearing partner found it easier to get hearing friends through their partner. Some of the participants have no HH friends; all their social network contacts are through their hearing partner: “...because my partner has hearing friends from the past who are now our common friends...But I’m trying to teach them sign language so that we can talk...” (2). This quote reveals one way to be included in a

hearing social environment. It is easier to find hearing friends through others who can hear. A lack of good communication between hearing and HH people could be a factor in making mistaken assumptions about each other. Some participants shared how important it is to teach hearing coworkers and friends how to talk to them in the best way. The participants expressed that they must educate hearing people to enable them to be part of the discussion, and that this is a way to become included in the hearing social environment; not doing so could lead to loneliness.

Finding new friends can be difficult. Through different social activities, some participants had found new friends and partners with whom to maintain social contacts. Participant 1 expressed the following: "I joined the Scouts. I still have several friends from there. Now, I've left the Scouts, but I still have my friends". However, the participants also mention experiences of how social activities sometimes can exclude them. They especially mentioned feelings of exclusion in social activities where there are too many people. Even if only two other people are having a conversation, exclusion occurs if the hearing individuals do not understand how to act when a HH person is present. They forget that they must face the person with hearing loss to enable him or her to lip read: "If two people are standing and talking, and are just facing each other, then I think, let them talk" (14).

To summarize this section, the results reveal that day-to-day communication with friends and partners, whether about important subjects or things that seem unimportant, is the keystone of healthy relationships. Hearing loss can cause those small but important social interactions to be lost. When communication breaks down, frustration sneaks in. That frustration can lead to a sense of loneliness and isolation from others.

3.2.2. Initiating and Maintaining Social Relationships with AT and ICT

The last research question: "What opportunities and challenges do ICT and AT present to HH people in their daily life?" highlight the importance of AT (assistive listening devices (ALDs), augmentative and alternative communication devices (AAC) and alerting devices connect to a doorbell and telephone) and ICT (computers, smartphones, iPads, tablets, Internet and online social networking communities on the internet, such as Facebook, twitter and YouTube) as a tool for maintain both social relationships and social relationships. Communication has become more efficient with various formats. Therefore, people with HH can succeed in living more independently. The participants point out that AT facilitates accessing and participating in their daily activities. For example, one participant expressed that without such assistive equipment it would be impossible to have a job: "I just had to test whether it was possible for me to teach in a hearing class. Without assistive devices, without a hearing loop, it might not have worked so well or not worked at all" (5).

All the participants mentioned the importance that people who can hear speak clearly and face them, so that they can read their lips while they speak. However, it is not only in conversation that participants feel excluded. In some activities, being HH makes them feel as though they are not as widely accepted as they would like to be. In most environments, there are no hearing loops, and the lighting in public areas is sometimes bad, which makes it difficult to lip read. This sometimes forces HH people to make difficult choices, to prioritize between being together with hearing people or engaging in certain activities, such as swimming:

"If I wanted to swim, then I had to take off my hearing aid when I bathed and so I became deaf... I could not hang out socially, not talk with anybody. So, it was either swim or hear". (1)

This example refers to the relationship between the person and the social environment in which the person lives. These findings reflect and may explain the fact that if the social environment is limited and has not been adapted to accommodate people with disabilities, it creates obstacles.

The participants expressed a desire to be like everyone else and tried in various ways to maintain an invisible disability. For example, they tried to avoid showing the hearing aids that they use, because these are associated with hearing loss. One way to do that

is to hide signs of the disability. One participant said that he sometimes chooses to hide his hearing aid. He experienced that he was treated differently when individuals did not know that he is HH: “Nowadays, I wear a hat and have long hair. I don’t want to be treated differently” (6). The above quotes show that AT can be a key factor in enabling HH individuals to participate in daily life and be included in society. AT is a two-edged sword, however, in that it is both a tool for attaining independence and a visible sign of disability, which can lead to feelings of exclusion.

For the participants, ICT played an important role in meeting new friends and maintaining friendships. Participant 13 said, “For a while, I had many friends on the Internet”. The Internet is also a form of social activator, enabling social networks. All participants experienced the Internet as something that had made it easier to develop new contacts and maintain previous contacts. The Internet reduces barriers to communicating with others. Participant 9 revealed, “After high school everyone splits up. Everyone returns to their hometowns. So, you get in touch that way [online], which is very, very good”. Participant 1 stated, “Yes, it’s nicer to discuss on the Internet: forums and similar places. Because it’s not as easy to be misunderstood. I’m the same as a hearing person on the Internet”. Furthermore, participants also viewed online dating as a good way to meet a partner because it reduced the initial communication barriers. They experienced it as convenient to take the initial contact in a forum where their hearing disability is not an obstacle to communication. Indeed, they perceived it as an easy way both to make new friends and find a partner:

“The first one I met on the Internet was HH and the other one could hear. I sent an email and immediately explained that I was hard of hearing and that we could communicate with each other anyway on our smartphones. We could write or communicate via sign language via webcams. And then, after a year, we met in real life too and got together and moved here.” (7)

The above quotes show the importance of modern technology such as the use of apps and computers to communicate. ICT allows HH people to chat and stay in touch with friends and family and meet new friends and partners via video or text. It is obvious from the interviews that such technology has opened doors that were previously shut to HH individuals. The results of the interviews show that the technology helps those with hearing loss to take contact with others. On the Internet, a real conversation can be held that can be both comfortable and exciting. Most important of all is that the participants reveal that they feel they are on the same level in a discussion, and there are no barriers that must first be overcome.

Summing up the importance of having social relationships, the findings reveal that hearing loops, websites, student portals and smartphones have improved participants’ social relationships and been helpful in maintaining them. The Internet and smartphones have been important communication tools for HH people because the communication is not hindered, and they can function and feel like everyone else.

4. Discussion

The aim of this study was to examine HH adults’ experiences of social interactions and social relationships in higher education, working life and leisure time. The findings have shown that almost every one of the participants express that they had no problems performing assignments in school and job tasks at work; the difficulties instead had to do with social interactions with hearing people because of the communication barrier that arose in large groups of people. Some participants also described experiencing feelings of social exclusion caused by coworkers’ attitudes toward disabilities. These experiences led to their feeling outside the working group and also to loneliness. Sometimes they could feel ashamed of their communication abilities and of their hearing aids. In the same way the results show that both AT and ICT had a remarkably positive impact on their lives, at school, at work and in leisure time. The experience of belonging to a group and the ability to communicate with the rest of the population had a large impact of the participants’ lives.

In all themes, the results of this study show that communication is the key to feeling socially included. Regardless of the fact that these interviews were done in 2011–2012, the findings of this study show the same patterns. The main factor for social inclusion for people with hearing loss is communication [48], while barriers to communication between HH and hearing people risk causing loneliness and social difficulties [49–51].

The participants describe this with regard to both school and the workplace in terms of having a sense of belonging to a group, while a lack of communication caused them to feel socially excluded in some hearing groups. Tajfel and Turner [52,53] claim that people need to belong to a group to ensure a sense of well-being and self-esteem. The social identity created by a collective “we” feeling indicates a solid emotional and social affiliation with others in the same situation [54] and the feeling of belonging has to do with maintaining or enhancing feelings of closeness to, or acceptance by other people [49,55]. A positive social identity exhibits similarity to collective self-esteem [51,56], which can be obtained through social comparisons or the appreciation of others. Group membership is an essential part of an individual’s self-concept, and individuals socially categorize themselves and others by preferring their ingroup, maintaining a positive identity and increasing their sense of self-worth [52,53].

One of the themes highlights the obstacles that HH people must cope with in higher education. All the participants had experienced a significant number of different barriers related to learning and socializing with others. These barriers were mostly associated with communication difficulties, and in almost every situation in school one must socialize with others through communication. Difficulties in being understood by hearing confirm recent research [57,58]. Social interaction and social relationships must be developed through thoughtfulness and conversation; otherwise, the relationships will suffer and could even end [59]. Studies have found deaf and hard of hearing adolescents to have higher levels of loneliness than same-age peers without hearing loss [19,60], and the communication barriers are a strong predictor of social exclusion [58]. To be socially included and participate in a group, the individual must be able to handle the language in which the group communicates [61,62], and in the case of HH students, failure to do so could lead to them feeling socially excluded by their classmates because of their hearing loss [63]. This feeling of not being socially included can influence people’s self-concept and self-esteem. Cooley [6] conceived that people formulate their self-concept in part from a mental image of themselves and in part from an imagined judgment from relevant others in a certain social context. We draw part of our sense of identity and self-esteem from the social groups to which we belong [53,64,65].

These communication barriers in higher education may be an important factor in why people with hearing loss are still under-represented in higher education. Although inclusive education policies have expanded, it is unclear whether they have been effective in increasing the inclusion of HH people in higher education [66]. This is a matter for concern because participation in higher education should result in better-paid professions and careers [67,68].

In the theme: “Communication barriers lead to feelings of exclusion at work” in this study explores how the participants experience the social interactions and social relationships at work. The same feelings of isolation and social exclusion that many of the participants’ experience in higher education are also experienced by them in their working life. Negative emotions such as a sense of social exclusion, withdrawal, shame, anxiety, fear and feeling misunderstood in the workplace affect them psychosocially. Recent research [69] has revealed that people who are DHH continue to face considerable barriers in their working lives. The focus of communication difficulties is not the environmental surroundings, though this could be a major obstacle, but rather is found in the missed opportunities to have spontaneous discussions during breaks and day-to-day encounters and interactions.

Environmental noise, the stress of group meetings, and communication barriers in informal work-related social interactions, can all be perceived as disturbing and exhausting,

and lead to withdrawal [70,71]. Group interactions such as meetings, and work-related social meanings were mainly challenging. These results are consistent with recent studies of these types of group situations [5,72]. These communications barriers can create difficult situations for people with hearing loss, who may end up experiencing feelings of social exclusion [73].

People with hearing loss also face negative attitudes from coworkers or employers who have misconceptions about hearing loss and limited acceptance for it. Recent studies reported reluctance among employees who were DHH. Communication difficulties with colleagues and employers are perceived to adversely affect social interaction [71,74]. To reduce the feeling of being excluded, many people with hearing loss choose to avoid communicative situations, and this in turn can lead to social exclusion [75]. These feelings of social exclusion cause HH people to quit their jobs with hearing people and apply for jobs working with others with hearing loss. The most comfortable types of jobs were those requiring them to use sign language. The participants may avoid demanding or stressful situations where they have little control over the environment, for example a workplace with hearing people.

In the last theme, which highlights the importance of technology, the results show that almost all the participants expressed the importance of various technologies that facilitate social interaction and contribute to a feeling of social inclusion and have a strong need and desire for ICT. To have social interaction with the help of ICT, for example through social media like Facebook, was perceived as promoting good communication and closeness among friends and family members [18,76]. All the participants expressed how AT and ICT such as hearing loops, text/videophones, smartphones, the Internet and also other equipment such as quiet lighting, air-conditioning and ventilation systems made a great difference in their lives. These findings are comparable to those of previous research on the importance of communication via Internet and smartphones [77,78]. These can be useful communication tools for HH people, as the communication is not hindered and HH people can function and feel like everyone else. AT and ICT can be a key factor in enabling individuals with hearing loss to participate in daily life and be included in society [76]. Today, improvements in the field of technology have provided solutions for many people. Bluetooth and some loop systems are portable, making it possible for people with hearing loss to improve their listening environments. These new technologies contribute to individual differences in education and workforce participation, but regarding communication with hearing people, the HH group still express finding it difficult to engage in social interaction and social relationships. To be successful with hearing assistive devices, users must have self-confidence, self-esteem, extroversion and a locus of control [79]. Perhaps it could be a cultural issue that is regularly related to the idea of a “linguistic minority”, then change is not exclusively a matter of technology but instead numerous problematic thoughts such as attitudes in relation to HH inclusion [80].

A person’s self-image arises in communicative and social interactions with others, and it may include different identities, roles and values. Cooley’s [6] theory of the looking-glass self explains the process of how the individual sees him- or herself in a mirror, then starts to imagine how he or she appears to others, anticipates their judgment, and acts accordingly. Social media on the Internet permit individuals to easily produce a mediated form of their own self, by viewing their self as reflected in others’ comments and replies, likes and shares. These shape an identity, one of many social identities, an identity about who you are or want to be.

Limitations of the Study

For several informants, the interviews were their first chance to express their experiences about social interaction and social relationships in relation to their hearing loss. This led to a significant amount of data and provided deeper insight into the informants’ life situations. However, the study would have benefited from more data about higher education. Only a few of the informants had completed higher education.

Another limitation was the small sample size. The goal, however, was not to generalize, but instead to provide valuable information about HH people's experiences of social interaction and social relationships. Nonetheless, it would be of value to supplement further studies with a quantitative design to reach out to more people with hearing loss and see if more people have similar experiences.

This study only had participants with severe-to-profound hearing loss. Some studies show that the opportunities to have friends depend on the level of hearing loss, but in others no such correlations are found [81]. The results might have been different if we had the opportunity to have participants with mild hearing loss or participants who only could use sign language. Future research will show if the inclusion of participants with other prerequisites will give other results.

5. Conclusions

Most HH people experience communication barriers in higher education, at work and in leisure time. These barriers lead to feelings of loneliness and make it difficult to achieve social inclusion in various group situations such as group-work at school, meetings at work, both physical and over the Internet and social settings such as coffee and lunch breaks. The desire to feel socially included would be easier to fulfill if there were more opportunities to communicate with hearing people. Whether this can be attained through multiple forms of support or through more people learning sign language has yet to be determined, but a more inclusive social environment needs to be achieved in one way or another. Society has an essential part to play in making people with hearing loss feel socially included. HH individuals should have the same opportunities as hearing people to educate themselves and work however they wish. With appropriate targeted support such as AT and ICT, people with HH could move from social exclusion towards social inclusion and experience richer lives.

The conclusions of this study highlight the need for more research to be conducted with different HH people to improve and address the barriers HH people experience in participating in education, at work and in leisure time. How individual characteristic links to communication barriers and how these is related to different environment such as education and work. This is important for HH people who are in education at work just now, but also for upcoming generations.

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References

1. Rahim, E. Marginalized through the 'Looking Glass Self'. The development of stereotypes and labeling. *J. Int. Acad. Res.* **2010**, *10*, 9–19.
2. Rose, A.J.; Montemayor, R.J.S.R. The relationship between gender role orientation and perceived self-competency in male and female adolescents. *Sex Roles* **1994**, *31*, 579–595. [[CrossRef](#)]
3. Mead, G.H.; Arvidson, P. *Medvetandet, Jaget och Samhället: Från Socialbehavioristisk Ståndpunkt*; Argos: Milton Keynes, UK, 1976.
4. Goldblat, E.; Most, T. Cultural identity of young Deaf adults with cochlear implants in comparison to Deaf without cochlear implants and hard-of-hearing young adults. *J. Deaf Stud. Deaf Educ.* **2018**, *23*, 228–239. [[CrossRef](#)]
5. Haynes, S.J.W. Effectiveness of communication strategies for deaf or hard of hearing workers in group settings. *Work* **2014**, *48*, 193–202. [[CrossRef](#)]
6. Cooley, C. *Human Nature and the Social Order*; Cornell University Library: Ithaca, NY, USA, 1902.
7. Davidsson, T.; Petersson, F.J.M. Towards an actor-oriented approach to social exclusion: A critical review of contemporary exclusion research in a Swedish social work context. *Eur. J. Soc. Work* **2018**, *21*, 167–180. [[CrossRef](#)]
8. Tjørnhøj-Thomsen, T.; Philipsen, H.H. Hearing Loss as A Social Problem: A Study of Hearing-Impaired Spouses and Their Hearing Partners. Available online: <https://www.hearingreview.com/hearing-loss/patient-care/hearing-loss-as-a-social-problem> (accessed on 26 January 2021).
9. Deming, D.J. The growing importance of social skills in the labor market. *Q. J. Econ.* **2017**, *132*, 1593–1640. [[CrossRef](#)]
10. Caprara, G.V.; Barbaranelli, C.; Pastorelli, C.; Bandura, A.; Zimbardo, P.G. Prosocial foundations of children's academic achievement. *SAGE J.* **2000**, *11*, 302–306. [[CrossRef](#)]
11. Malecki, C.K.; Elliot, S.N. Children's social behaviors as predictors of academic achievement: A longitudinal analysis. *Sch. Psychol. Q.* **2002**, *17*, 1–23. [[CrossRef](#)]
12. Punch, R.; Hyde, M.; Creed, P.A. Issues in the school-to-work transition of hard of hearing adolescents. *Am. Ann. Deaf* **2004**, *149*, 28–38. [[CrossRef](#)]
13. Schroedel, J.G.; Geyer, P.D. Long-term career attainments of deaf and hard of hearing college graduates: Results from a 15-year follow-up survey. *Am. Ann. Deaf* **2000**, *145*, 303–314. [[CrossRef](#)] [[PubMed](#)]
14. Hallam, R.; Ashton, P.; Sherbourne, K.; Gailey, L.J.H. Persons with acquired profound hearing loss (APHL): How do they and their families adapt to the challenge? *Health (London)* **2008**, *12*, 369–388. [[CrossRef](#)]
15. Morgan-Jones, R.A. *Hearing Differently: The Impact of Hearing Impairment on Family Life*; Wiley: Hoboken, NJ, USA, 2001.
16. Dammeyer, J. Psychosocial development in a Danish population of children with cochlear implants and deaf and hard-of-hearing children. *J. Deaf Stud. Deaf Educ.* **2010**, *15*, 50–58. [[CrossRef](#)]
17. Elksnin, L.; Elksnin, N. *Teaching Social-Emotional Skills at School and Home*; Love Publishing Co.: Denver, CO, USA, 2006.
18. Joo, T.-M.; Teng, C.-E. Technology, impacts of social media (Facebook) on human communication and relationships: A view on behavioral change and social unity. *Int. J. Knowl. Content Dev. Technol.* **2017**, *7*, 27–50.
19. Barak, A.; Sadosky, Y. Internet use and personal empowerment of hearing-impaired adolescents. *Comput. Hum. Behav.* **2008**, *24*, 1802–1815. [[CrossRef](#)]
20. Maor, D.; Currie, J.; Drewry, R. The effectiveness of assistive technologies for children with special needs: A review of research-based studies. *Eur. J. Spec. Needs Educ.* **2011**, *26*, 283–298. [[CrossRef](#)]
21. Statistics Sweden. *The Labour Market. Situation for People with Disabilities 2018. Information about Education and Labour Market*; IAM: Stockholm, Sweden, 2018.
22. Bell, D.; Swart, E. Learning experiences of students who are hard of hearing in higher education: Case study of a South African university. *Soc. Incl.* **2018**, *6*, 137–148. [[CrossRef](#)]
23. Swedish Association of Hard of Hearing People. *Uh, It Was Nothing Important-About Hard of hearing Situation in Sweden: Annual Report*; National Association of the Hearing Impaired: Stockholm, Sweden, 2007.
24. Swedish Association of Hard of Hearing People. *Stora Problem Med. Big Problems with Poor Sound Environment in College*; The National Hearing Association: Stockholm, Sweden, 2011.
25. Bukowski, W.M.; Newcomb, A.F.; Hartup, W.W. *The Company They Keep: Friendships in Childhood and Adolescence*; Cambridge University Press: Cambridge, UK, 1998.
26. Berndt, T.J. Friendship quality and social development. *Curr. Dir. Psychol. Sci.* **2002**, *11*, 7–10. [[CrossRef](#)]
27. Bollmer, J.M.; Milich, R.; Harris, M.J.; Maras, M. A friend in need: The role of friendship quality as a protective factor in peer victimization and bullying. *J. Interpers. Violence* **2005**, *20*, 701–712. [[CrossRef](#)]
28. Blom, H.; Marschark, M.; Vervloed, M.P.; Knoors, H. Finding friends online: Online activities by deaf students and their well-being. *PLoS ONE* **2014**, *9*, e88351. [[CrossRef](#)]
29. Kouwenberg, M. *Social-Emotional Factors Underlying Internalizing Problems, Peer Relations in Deaf or Hard of Hearing Youth*. Ph.D. Thesis, Leiden University, Leiden, The Netherlands, 2013.
30. Brunnberg, E. *vi Bytte Våra Hörande Skolkamrater mot Döva!: Förändring av Hörselskadade Barns Identitet och Självförtroende Vid Bytte av Språklig Skolmiljö*; Örebro Universitetsbibliotek: Örebro, Sweden, 2003.
31. Bat-Chava, Y.; Martin, D.; Imperatore, L. Long-term improvements in oral communication skills and quality of peer relations in children with cochlear implants: Parental testimony. *Child Care Health Dev.* **2014**, *40*, 870–881. [[CrossRef](#)]

32. Bat-Chava, Y.; Martin, D.; Kosciw, J.G. Psychiatry, Longitudinal improvements in communication and socialization of deaf children with cochlear implants and hearing aids: Evidence from parental reports. *J. Child Psychol. Psychiatry* **2005**, *46*, 1287–1296. [[CrossRef](#)] [[PubMed](#)]
33. Toofaninejad, E.; Zaraii Zavaraki, E.; Dawson, S.; Poquet, O.; Sharifi Daramadi, P. Social media use for deaf and hard of hearing students in educational settings: A systematic review of literature. *Deaf. Educ. Int.* **2017**, *19*, 144–161. [[CrossRef](#)]
34. Maiorana-Basas, M.; Pagliaro, C.M. Technology use among adults who are deaf and hard of hearing: A national survey. *J. Deaf Stud. Deaf Educ.* **2014**, *19*, 400–410. [[CrossRef](#)] [[PubMed](#)]
35. World Health Organization. *Global Costs of Unaddressed Hearing Loss and Cost-Effectiveness of Interventions: A WHO Report*; World Health Organization: Geneva, Switzerland, 2017; pp. 5–10.
36. Swedish Association of Hard of Hearing People. *Hard of Hearing in Figurers 2017: Statistics of Hard of Hearing and Hearing Aid Tests in Sweden from The National Association of Hearingloss*; HRF, Swedish Association of Hard of Hearing People: Stockholm, Sweden, 2017.
37. Byrnes, L.J.; Sigafoos, J.; Rickards, F.W.; Brown, P.M. Inclusion of students who are deaf or hard of hearing in government schools in New South Wales, Australia: Development and implementation of a policy. *J. Deaf Stud. Deaf Educ.* **2002**, *7*, 244–257. [[CrossRef](#)] [[PubMed](#)]
38. Kent, B.A. Identity issues for hard-of-hearing adolescents aged 11, 13, and 15 in mainstream setting. *J. Deaf Stud. Deaf Educ.* **2003**, *8*, 315–324. [[CrossRef](#)]
39. Stinson, M.; Liu, Y. Participation of deaf and hard-of-hearing students in classes with hearing students. *J. Deaf Stud. Deaf Educ.* **1999**, *4*, 191–202. [[CrossRef](#)]
40. Richardson, J.T.; MacLeod-Gallinger, J.; McKee, B.G.; Long, G. Approaches to studying in deaf and hearing students in higher education. *J. Deaf Stud. Deaf Educ.* **2000**, *5*, 156–173. [[CrossRef](#)]
41. Bogdan, R.C.; Biklen, S.K. *Qualitative Ffor Education: An Introduction to Theory and Methods*; Allyn and Bacon, Inc.: Boston, MA, USA, 2007.
42. Engström, L.; Kallenberg, C.; Smedler, A.-C. 'Vad är en Kompis?' En kvalitativ Analys och Fortsatt Utprövning av Cornell Interview of Children's Perceptions of Friendships and Peer Relations (CIPF) med 7-11-åringar; University of Stockholm: Stockholm, Sweden, 1994.
43. Kernberg, P.F.; Clarkin, A.J.; Greenblatt, E.; Cohen, J. The Cornell interview of peers and friends: Development and validation. *J. Am. Acad. Child. Adolesc. Psychiatry* **1992**, *31*, 483–489. [[CrossRef](#)]
44. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [[CrossRef](#)]
45. Nowell, L.S.; Norris, J.M.; White, D.E.; Moules, N.J. Thematic analysis: Striving to meet the trustworthiness criteria. *SAGE J.* **2017**, *16*, 1609406917733847. [[CrossRef](#)]
46. Council, R. *Research Ethical Principles in Humanities–Social Science Research*; Stockholm: Vetenskapsrådet, Sweden, 2011.
47. Lincoln, Y.S.; Guba, E.G. *Naturalistic inquiry*. *Newberry Park*; SAGE Publications Inc.: Thousand Oaks, CA, USA, 1985.
48. De Mare, A.R. *Barriers Facing Deaf and Hard-of-Hearing People in Outdoor Education*; Alaska Pacific University: Anchorage, AK, USA, 2019.
49. Duncan, J.; Colyvas, K.; Punch, R. Social capital, loneliness, and peer relationships of adolescents who are deaf or hard of hearing. *J. Deaf Stud. Deaf Educ.* **2020**, *26*, 223–229. [[CrossRef](#)]
50. Punch, R.; Hyde, M. Social participation of children and adolescents with cochlear implants: A qualitative analysis of parent, teacher, and child interviews. *J. Deaf Stud. Deaf Educ.* **2011**, *16*, 474–493. [[CrossRef](#)]
51. Eichengreen, A.; Zaidman-Zait, A. Relationships among deaf/hard-of-hearing siblings: Developing a sense of self. *J. Deaf Stud. Deaf Educ.* **2020**, *25*, 43–54. [[CrossRef](#)] [[PubMed](#)]
52. Tajfel, H.; Turner, J.C. *An Integrative Theory of Intergroup Conflict*; ALNAP: London, UK, 1979; Volume 56, p. 65.
53. Tajfel, H.; Turner, J.C. The social identity theory of intergroup behaviour. In *Psychology of Intergroup Relations*; Nelson-Hall: Chicago, IL, USA, 1986; pp. 7–24.
54. Fredäng, P. *Teckenspråkiga Döva: Identitetsförändringar I Det Svenska Dövsamhället*; Örebro University: Örebro, Sweden, 2003.
55. Vignoles, V.L.; Regalia, C.; Manzi, C.; Gollidge, J.; Scabini, E. Beyond self-esteem: Influence of multiple motives on identity construction. *J. Personal. Soc. Psychol.* **2006**, *90*, 308. [[CrossRef](#)] [[PubMed](#)]
56. Luhtanen, R.; Crocker, J. A collective self-esteem scale: Self-evaluation of one's social identity. *Personal. Soc. Psychol. Bull.* **1992**, *18*, 302–318. [[CrossRef](#)]
57. Brice, P.J.; Strauss, G. Deaf adolescents in a hearing world: A review of factors affecting psychosocial adaptation. *Adolesc. Health Med. Ther.* **2016**, *7*, 67. [[CrossRef](#)]
58. Terleksi, E.; Kreppner, J.; Mahon, M.; Worsfold, S.; Kennedy, C.R. Peer relationship experiences of Deaf and hard-of-hearing adolescents. *J. Deaf Stud. Deaf Educ.* **2020**, *25*, 153–166. [[CrossRef](#)] [[PubMed](#)]
59. Danermark, B. *A Review of the Psychosocial Effects of Hearing Impairment in the Working-Age Population*; Whurr Publishers: London, UK, 2005.
60. Dammeyer, J.; Chapman, M.; Marschark, M. Experience of hearing loss, communication, social participation, and psychological well-being among adolescents with cochlear implants. *Am. Ann. Deaf* **2018**, *163*, 424–439. [[CrossRef](#)] [[PubMed](#)]
61. Most, T.; Ingber, S.; Heled-Ariam, E. Social competence, sense of loneliness, and speech intelligibility of young children with hearing loss in individual inclusion and group inclusion. *J. Deaf Stud. Deaf Educ.* **2012**, *17*, 259–272. [[CrossRef](#)]
62. Trost, J.; Levin, I. *Att Förstå Vardagen: Med ett Symbolisk Interaktionistiskt Perspektiv*; Studentlitteratur: Lund, Sweden, 2010.

63. Antonson, S. Hearing Impaired in College Studies: Opportunities and Obstacles. Ph.D. Thesis, Linköpings Universitet, Linköping, Sweden, 1998.
64. Hogg, M.A.; Ridgeway, C.L. Social identity: Sociological and social psychological perspectives. *Soc. Psychol. Q.* **2003**, *66*, 97–100.
65. Oakes, P.J.; Haslam, S.A.; Turner, J.C. *Stereotyping and Social Reality*; Blackwell Publishing: Hoboken, NJ, USA; Malden, MA, USA, 1994.
66. Roulstone, A.; Prideaux, S. More policies, greater inclusion? Exploring the contradictions of new labour inclusive education policy. *Int. Stud. Sociol. Educ.* **2008**, *18*, 15–29. [[CrossRef](#)]
67. Branine, M.; Avramenko, A. A comparative analysis of graduate employment prospects in European labour markets: A study of graduate recruitment in four countries. *High. Educ. Q.* **2015**, *69*, 342–365. [[CrossRef](#)]
68. Ndlovu, S.; Walton, E. Preparation of students with disabilities to graduate into professions in the South African context of higher learning: Obstacles and opportunities. *Afr. J. Disabil.* **2016**, *5*, 150. [[CrossRef](#)]
69. Punch, R. Employment and adults who are deaf or hard of hearing: Current status and experiences of barriers, accommodations, and stress in the workplace. *Am. Ann. Deaf* **2016**, *161*, 384–397. [[CrossRef](#)]
70. Hua, H.; Emilsson, M.; Ellis, R.; Widén, S.; Möller, C.; Lyxell, B. Health, Cognitive skills and the effect of noise on perceived effort in employees with aided hearing impairment and normal hearing. *Noise Health* **2014**, *16*, 79. [[CrossRef](#)]
71. Tye-Murray, N.; Spry, J.L.; Mauzé, E. Professionals with hearing loss: Maintaining that competitive edge. *Ear Hear.* **2009**, *30*, 475–484. [[CrossRef](#)]
72. Haynes, S.; Linden, M. Workplace accommodations and unmet needs specific to individuals who are deaf or hard of hearing. *Disabil. Rehabil. Assist. Technol.* **2012**, *7*, 408–415. [[CrossRef](#)]
73. Kelly, R.R.; Quagliata, A.B.; DeMartino, R.; Perotti, V. *21st-Century Deaf Workers: Going Beyond “Just Employed” to Career Growth and Entrepreneurship*; Oxford University Press: Oxford, UK, 2016.
74. Punch, R.; Hyde, M.; Power, D.J. Career and workplace experiences of Australian university graduates who are deaf or hard of hearing. *J. Deaf Stud. Deaf Educ.* **2007**, *12*, 504–517. [[CrossRef](#)] [[PubMed](#)]
75. Gullacksen, A.-C. *Hörselskadade I Arbetslivet. Ett Stress/Kontroll Perspektiv*; Socialhögskolan, Lunds Universitet: Lund, Sweden, 1993.
76. Lersilp, T.; Lersilp, S. Use of information technology for communication and learning in secondary school students with a hearing disability. *Educ. Sci.* **2019**, *9*, 57. [[CrossRef](#)]
77. Akamatsu, C.T.; Mayer, C.; Farrelly, S. An investigation of two-way text messaging use with deaf students at the secondary level. *J. Deaf Stud. Deaf Educ.* **2006**, *11*, 120–131. [[CrossRef](#)] [[PubMed](#)]
78. Pilling, D.; Barrett, P. Text communication preferences of deaf people in the United Kingdom. *J. Deaf Stud. Deaf Educ.* **2008**, *13*, 92–103. [[CrossRef](#)] [[PubMed](#)]
79. Rekkedal, A.M. Assistive hearing technologies among students with hearing impairment: Factors that promote satisfaction. *J. Deaf Stud. Deaf Educ.* **2012**, *17*, 499–517. [[CrossRef](#)] [[PubMed](#)]
80. AlShahrani, M.M. Saudi Educators’ Attitudes towards Deaf and Hard of Hearing Inclusive Education in Jeddah, Saudi Arabia. Ph.D. Thesis, University of Exeter, Exeter, UK, 2014.
81. Laugen, N.J.; Jacobsen, K.H.; Rieffe, C.; Wichstrøm, L. Predictors of psychosocial outcomes in hard-of-hearing preschool children. *J. Deaf Stud. Deaf Educ.* **2016**, *21*, 259–267. [[CrossRef](#)] [[PubMed](#)]