Job satisfaction and well-being among deaf and hard of hearing employees in Iceland

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JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

Foreword and acknowledgements

Submitted in partial fulfilment of the requirements of the BSc Psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.
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Abstract
Approximately 360 million individuals worldwide have auditory difficulties. Studies have shown that many individuals who are deaf or hard of hearing experience communicational and occupational barriers that may negatively affect their occupational advancement. Due to limited research, this study was conducted to examine the job satisfaction and well-being among employees who are deaf and hard of hearing in Iceland. Differences between experiences of employees who are deaf and employees who are hard of hearing were also examined. A sample of 46 individuals with auditory difficulty, 10 males and 36 females, was used. A survey based on the Icelandic version of the QPSNordic questionnaire for psychological and social factors at work and the Amsterdam Checklist for Hearing and Work was used to examine the participant’s experiences at work. The results indicated that employees who are deaf and hard of hearing receive much social support. Employees who are deaf experience more discrimination than employees who are hard of hearing, but there was not a difference between the two groups in experiencing psychological strain, and job satisfaction.

Keywords: hard of hearing employees, deaf employees, job satisfaction, job experience, social support

Útdráttur
JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

mismunun en þeir sem voru heyrnarskertir, en það var ekki marktækur munur á milli hópanna tveggja í upplifun á sálrænni streitu, og ánægju í starfi.

*Lykillhugtök:* heyrnarskertir starfsmenn, heyrnarlausir starfsmenn, starfsánægja, upplifun í starfi, félagslegur stuðningur
Work is an important factor in psychological health, (Blustein, 2008) and is one of the most significant determinants of perceived status in the society for many individuals (Scherich, 1996). This fact also applies to individuals who have auditory difficulties, where many deaf or hard of hearing individuals have performed the majority of occupations available (Dowler & Walls, 1996). Approximately 360 million individuals worldwide have auditory difficulties (World Health Organization, 2017), and it is estimated that auditory difficulties are among top 10 most common burden of disease, involving large consequences for work capacity (Hasson, Theorell, Westerlund, & Canlon, 2010; Friberg, Gustafsson, & Alexanderson, 2012). According to World Health Organization (2017), individuals who are deaf are defined as a person that have a very little or no hearing and often use sign language for communication. The term hard of hearing refers to a person that usually communicate through spoken language and can benefit from hearing aids or other assistive devices (World Health Organization, 2017).

Deaf and hard of hearing individuals have often been considered as vulnerable group on the labour market (Danermark & Gellerstedt, 2004; Rydberg, Coniavitis-Gellerstedt, & Danermark, 2010), where many deaf and hard of hearing individuals experience communicational and occupational barriers that may negatively affect occupational performance, and well-being in given population (Grimby & Ringdahl, 2000; Nachtegaal, Festen, & Kramer, 2011).

Specific hearing-related risk factors such as communication difficulties, lack of understanding, and background noise, are important factors concerning barriers that persons who are deaf or hard of hearing encounter at their workplace (Gellerstedt & Danermark, 2004; Kramer, Kaptegyn, Houtgast, 2006; Punch, Hyde, & Power, 2007; Nachtegaal, Festen, & Kramer, 2012; Jahncke & Halin, 2012; Perkins-Dock, Battle, Edgerton, & McNeill, 2015).

Persons who are profoundly deaf have often reported feeling isolated in their workplace, especially because of limitations in the ability to communicate effectively (Punch et al., 2007; Wells, Bhattacharya, & Morgan, 2009). Haynes & Linden (2012) aimed to identify workplace accommodations (i.e. adjustments) used by persons who are deaf or hard of hearing, and unmet needs with respect to workplace accommodations. They conducted an online survey involving fixed-choice and open-ended responses. Of 374 respondents, 71 had auditory difficulties
and were employed full-time. The most reported unmet needs were in relation to hearing in meetings, where the importance of having an interpreter was mentioned. Another commonly reported unmet need was a lack of co-worker support or unwillingness to adjust to the needs of the persons with auditory difficulties (Haynes & Linden, 2012).

Attitudinal barriers such as discrimination has also been reported by employees that are deaf or hard of hearing (Lussier, Say, Corman, 2000; Punch et al., 2007; Perkins-Dock et al., 2015). In a mixed study of Punch et al. (2007), specific examples of attitude barriers, such as lack of promotion because of their hearing loss and negative attitudes of co-workers or employers were mentioned by some of the respondents. Respondents also gave examples, such as having poor understanding or tolerance of hearing loss and not wanting to repeat what they said (Punch et al., 2007). Lane (2005) explained that linguistic difficulties and the lack of reasonable accommodations (i.e. adjustments), that can be provided for Deaf employees, is more the reason for the discrimination rather than the hearing loss itself.

Nachtegaal, Festen, & Kramer (2012) examined the need for recovery, sick-leave and self-rated job performance and limitations at work between employees who had a good hearing ability in noise, and employees who had an insufficient hearing ability in noise. Participants were 385 employees who had good hearing ability in noise and 363 employees who had insufficient hearing ability in noise. Nachtegaal et al. (2012) found no relationship between hearing ability in noise and self-rated job performance among respondent who experienced high social support. However, the self-rated job performance declined with poorer hearing ability in noise among employees who experienced little social support from co-workers and supervisors. However, no association was found between job performance and hearing ability among respondents who received high levels of social support.

Several studies demonstrated higher levels of fatigue or lack of energy among employees with auditory difficulties (Grimby & Ringdahl, 2000; Ringdahl & Grimby, 2000; Danermark & Gellerstedt, 2004; Kramer et al., 2006). Grimby and Ringdahl (2000) interviewed 35 full-time workers with auditory difficulties who expressed psychological strain when participating in conversations in their offices or in the coffee room, leading to exhaustion at work and after work.
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The Demand-Control Model is developed by Karasek & Theorell (1990) and is widely used in research on the psychosocial work environment. Job demands represent the psychological factors in the work environment, and job control refers to the person’s ability to control over their situations and work activities (Karasek & Theorell, 1990; Danemark & Gellerstedt, 2004). Working conditions that are high in demand and low in control are most likely to lead to psychological strain and other health problems (Punch, 2016).

Study by Kramer et al. (2006) compared psychological working conditions such as job demands and job control of a group of hard of hearing employees with their normal-hearing colleagues. The results revealed that the hard of hearing employees experienced lower levels of job control compared with their normal-hearing colleagues, although job demand was the same for both groups. In addition, the amount of sick-leave due to fatigue, burnout and strain was five times higher among deaf and hard of hearing employees. Similar results were reported by other researchers. Compared with normal hearing colleagues, those who have auditory difficulties more often experienced an imbalance between job control and job demands. Employees that had auditory difficulties reported significantly lower levels of control and social support and were more likely to experience high levels of stress (Danermark & Gellerstedt, 2004; Gellerstedt & Danermark, 2004). Hence, social support could be an important factor in reducing the barriers or negative effects of hearing loss and increase the job satisfaction among deaf and hard of hearing employees.

Even though previous studies have indicated that deaf and hard of hearing individuals experience occupational difficulties that may negatively affect their participation in the labour market, the relationship between auditory difficulties and job satisfaction seems to have received little attention of researchers in Iceland. This researcher found only one report concerning social status of Icelandic persons who are deaf, where 46% of 93 respondents experienced psychological strain in their workplace, partly because of communicational difficulties (Guðmundur Ævar Oddsson & Hekla Gunnarsdóttir, 2004). Thus, further research on occupational status, barriers and experience of deaf and hard of hearing employees in Iceland are needed.
This study aims to examine the job satisfaction and well-being among employees who are deaf or hard of hearing. Six hypotheses were proposed. The first hypothesis was that there is a difference between employees who are deaf and employees who are hard of hearing in experiencing job satisfaction. The second hypothesis was that there is a difference between employees who are deaf and employees who are hard of hearing in experiencing psychological strain for the last six months. The third hypothesis was that employees who are deaf experience more discrimination by their supervisor, than employees who are hard of hearing. The fourth hypothesis was that employees who are deaf experience more communicational difficulties than employees who are hard of hearing. The fifth hypothesis was that employees who are hard of hearing experience more social support than employees who are deaf. Hypothesis six was that employees who are hard of hearing experience more job demand and less job control than employees who are deaf.

Method

Participants

This research was a mixture of a snowball sample and a volunteer sample, since the group of interest can be hard to reach. A total of 46 individuals with auditory difficulty (21.7% male and 78.3% female) participated in the study. The youngest participant was 20 years old and the oldest participant was 67 years old. The mean age of the sample was 46.24 years (SD = 11.34).

The severity of auditory difficulties were separated into two categories, deaf employees and hard of hearing employees. Participants who were deaf, but using hearing aids and communicate mostly with sign languages, or being profoundly deaf, were combined into one group. Participants who had auditory difficulties, whether they use hearing aids or not were combined into another group. A great majority of the participants were hard of hearing, or 78.3%. The mean age of deaf employees was 48 years (SD = 8.57) and the mean age for the hard of hearing employees was 45.75 years (SD = 12.05).

Participants were recruited through posts on Facebook pages such as Heynarhjálp, Samskiptamiðstöð heyrnarskertra og heyrnarlausra (SHH), Félag heyrnarlausra (e. The Icelandic Association of the Deaf), and Heynmar-og
talmeinastöð (e. The national Hearing and Speech Institute of Iceland), as well as the researcher’s Facebook page.

In order to participate in the study, all participants must meet the criteria of being either deaf or hard of hearing and have a job. All participants must have reached the age 18 years. The participants either used sign language, spoken language or both. The participants’ educational level varied from primary education to master’s degree from a university.

The data collection was based on informed passive consent, where all participants in the study were volunteers and were informed that when answering the online-survey they accepted to participate in the study, but were free to quit the survey if they felt uncomfortable. No identifying information was obtained and the answers could not be traced back to participants.

**Measures**

The researcher designed an online survey containing a combination of forced-choice and open-ended questions. Since there is no standardized questionnaire for hearing and work in Iceland, the questionnaire was designed with questions that are either original made by the researcher, or based on *Amsterdam Checklist for Hearing and Work* (Kramer et al., 2006), and the Icelandic version of the *QPSNordic questionnaire for psychological and social factors at work* (Lindström et al., 2009).

The *Amsterdam Checklist for Hearing and Work* was composed by Kramer et al. (2006), to investigate the relationship between hearing and work. The questionnaire includes disease-specific items as well as generic items, such as career satisfaction and support, job control and job demand. The inter-item correlations varied from 0.57 to 0.89 and the alpha coefficient was 0.90 (Kramer et al., 2006). The two items from the *Amsterdam Checklist for Hearing and Work* that were used are “is your work more demanding for you than for your normally-hearing colleagues?” and “can you make decisions about things that have to do with your work?”. The latter question was slightly modified (see appendix B, p. 34). The *QPSNordic questionnaire for psychological and social factors at work* was designed for the assessment of psychological, social and organizational working conditions. The list consists of 129 multiple choice questions assessing for example job demands, job control, role expectations and social interaction with co-workers.
(Lindström et al., 2009). The internal consistency of the questionnaire was measured with Chronback’s alpha and was between 0.60 and 0.88. In 2004, Hölmfríður K. Gunnarsdóttir translated the questionnaire into Icelandic (Lindström et al., 2009). Some of the items used in the online survey were slightly modified, for example “is it possible to have social contact with co-workers while you are working?” was changed into the statement “I can have social contact with my co-workers while I’m working” (see appendix B, p. 34).

The online-survey used in this research consists of 21 questions and is divided into six parts: 1) Background questions, 2) questions about communication at the workplace, 3) social support, 4) job demand and job control, and 6) job satisfaction, discrimination and psychological strain.

**Background information.** The first 14 questions in the survey assess background information with questions regarding demographic variables (i.e. age, gender, education and occupational status). Information on hearing status and linguistic use or a preference (i.e. spoken language, sign language or both) were also assessed. The questions are either originally made by the researcher and taken from *The QPSNordic questionnaire for psychological and social factors at work*. Most of the questions are on nominal scale, two to nine-point ordinal scales and three of the questions are open-ended (see appendix B, p. 34).

**Communication.** The second part is a multiple choice question concerning communication at the workplace. The question is on five point Likert scale and includes six statements, for example participating in social conversations in the coffee room. The statements were on 5 point Likert scale with the anchors 1 = “Does very seldom or never apply to me” to 5 = “Does very often or always apply to me” (see appendix B, p. 34).

**Social support.** The third part concerns social support including six statements for example getting support and help from co-workers or immediate superior. The statements were on five-point Likert scale with the anchors 1 = “Does very seldom or never apply to me” to 5 = “Does very often or always apply to me” (see appendix B, p. 34). Five statements were used for statistical analysis, to examine whether employees who are deaf or hard of hearing experience receiving social support.
Job demand. The fourth part of the questionnaire is a multiple-choice question and concerns job demand including nine sub questions. The questions concern for example whether it is necessary to work at a rapid pace or if the participants can influence the amount of work assigned to them. The statements were on five-point Likert scale with the anchors 1 = “Does very seldom or never apply to me” to 5 = “Does very often or always apply to me” (see appendix B, p. 34). Only six statements were used to measure job demands among employees who are deaf or hard of hearing.

Job control. The fifth part of the questionnaire concerns job control and includes six statements, for example, if the participants can influence the amount of work assigned to them or if they can set their own work pace. The statements were on five-point Likert scale with the anchors 1 = “Does very seldom or never apply to me” to 5 = “Does very often or always apply to me” (see appendix B, p.34). Four statements were used to measure job control among employees who are deaf or hard of hearing.

Job satisfaction and well-being. The last part of the questionnaire concerns satisfaction with one’s workplace, discrimination and psychological stress one may feel at their workplace. The question concerning the number of days taken in sick-leave was included in this part of the study to examine the well-being of the deaf and hard of hearing employees. The questions were on five-point ordinal scale (see appendix B, page, 34).

Procedure

An online survey was designed to assess information that was necessary to test the hypothesis of this research. Sign language has it´s own morphology and grammar that differ in speech (Félag heyrnarlausra, n.d.), therefore a review from individuals that were deaf was essential. Three individuals that were deaf, were asked to answer the survey and give feedback if there were any. When the three respondents had given feedbacks, all comments were used to customize some of the questions.

Heyrnar- og talmeinastöð (e. The National Hearing and Speech Institute of Iceland), Félag heyrnarlausra (e. The Icelandic Association of the Deaf), Heyrnarhjálp, Samskiptamiðstöð heyrnarlausra og heyrnarskertra (SHH) received an email with a
brief presentation of the survey and a request to share the presentation and a link to the online-survey to their members (See appendix C, p. 43). In the end of October 2017, the survey was administered online through the survey software Question Pro. Félag heyrnarlausra (e. The Icelandic Association of the Deaf), Heyrnarhjálp, Samskiptamiðstöð heyrnarlausra og heyrnarskertra (SHH) and the researcher all shared the presentation with the link to the survey on their social networking site Facebook and Heyrnar- og talmeinastöð (e. The National Hearing and Speech Institute of Iceland) also shared the presentation on their own website.

The online survey was open for respondents for six weeks total, from the beginning of November 2017 to the beginning of December 2017. It took about 10-15 minutes to complete the survey. Of the 80 individuals who started the survey, 34 were excluded since they dropped out of the survey.

**Data analysis**

The study design was both descriptive and analytic method where an anonymous online questionnaire was used. To the authors best knowledge, little information is available about deaf and hard of hearing employees, and therefore a descriptive method was used in hope to gather information about the given population.

Sample employment characteristics, statements concerning communication at the workplace, social support, job control and job demand, and job satisfaction and well-being are all presented with descriptive statistics. The independent variable was the hearing status and the dependent variables were the experiences reported by participants. Independent t-tests for difference were conducted for the two independent groups for all variables of the experiment. The Levene’s test was used to test for homogeneity of the variance. The assumption of homogeneity was violated in the statements “participating in a social communication at the coffee room” and “being good at communicating with clients”, p < 0.05. Thus, both of the statements were excluded from further analysis. A 95% confidence interval was used in all cases.

All answers from the online-survey database were transferred to the Statistical Package for the Social Science (SPSS) for analysis. Tables and figures were made in Microsoft Excel.
Results

The first chapter describes sample employment characteristics, the second chapter describes communication at the workplace, the third chapter concerns factors regarding job control and job demand, and the fourth and last chapter concerns job satisfaction and well-being among deaf and hard of hearing employees, including number of days sick-leave was taken.

Employment Characteristics

Participants were asked to identify their education and employment demographics including level of employment, job description, how many employees currently are working in their workplace and whether their co-workers can use sign language, number of years worked in the current job and number of hours worked per week.

Regarding the level of employment, all the questions were multiple answer questions and the participants could choose more than one option. In total of 32 participants (40%) reported being employees and five (6.3%) reported being employers. Eight respondents (17.4%) reported being self-employed and one participant (1.3%) was on a maternity leave during the time of the study. Of the 46 valid responses, 43.5% reported having a full-time job and 15.2% reported having a part-time job.

Table 1 shows the participant’s hearing status, educational level and employment status. A total of 36 individuals reported being hard of hearing or 78.3%, and 10 individuals reported being Deaf, or 21.7%. The highest educational level completed by participants was a Master’s degree (13%) and the lowest was elementary degree (19.4%).
Table 1.

<table>
<thead>
<tr>
<th>Participant’s hearing status and educational level</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of auditory difficulty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No hearing aids/spoken language</td>
<td>8.3%</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Hearing aids/spoken language</td>
<td>40.0%</td>
<td>36.1%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Hearing aids/both spoken and sign language</td>
<td>30.0%</td>
<td>36.1%</td>
<td>34.8%</td>
</tr>
<tr>
<td>Deaf with hearing aids/sign language</td>
<td>10.0%</td>
<td>8.3%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Profoundly deaf/sign language</td>
<td>20.0%</td>
<td>11.1%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Level of educational attainment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td>20.0%</td>
<td>19.4%</td>
<td>19.6%</td>
</tr>
<tr>
<td>High school</td>
<td>13.9%</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>Journeyman degree</td>
<td>30.0%</td>
<td>2.8%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Journeyman masters degree</td>
<td>2.8%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Other degree at the advanced level</td>
<td>11.1%</td>
<td>8.7%</td>
<td></td>
</tr>
<tr>
<td>University undergraduate (Bachelor’s)</td>
<td>30.0%</td>
<td>33.3%</td>
<td>32.6%</td>
</tr>
<tr>
<td>University postgraduate (Master’s)</td>
<td>10.0%</td>
<td>13.9%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Other</td>
<td>10.0%</td>
<td>2.8%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

The participants mean period of employment was 7.40 years (SD = 6.29), and ranged from 0-29 years. The mean period of employment for male participants was 12.65 years (SD = 8.56), and 7.40 years for women (SD =6.29).

The total amount of hours worked per week ranged from three hours to 64 hours. The mean hours worked per week was 28.89 (SD = 16.97), and the most common response was that participants worked 40 hours per week. The mean hours worked per week was 40.9 hours for male participants (SD = 15.08), and 25.46 hours for female participants (SD = 16.06).

The majority of participants work in a workplace with more than 20 employees or 50%. Participants who worked at a workplace with less than 10 employees were 32.6%, and 17.4% worked in a workplace with 11-20 employees.

Regarding whether co-workers know to use sign language to communicate, six (13%) reported that all of their co-workers use sign language, seven (15.2%) reported that some of them use sign language, four (8.7%) reported that very few (one to three co-workers) use sign language, and 15 (18.8%) reported that none of
their co-workers use sign language. Participants who responded that it was not applicable (i.e. do not communicate with sign language themselves), were in total 14 (32.6%).

Figure 1 shows co-worker’s sign language use reported by employees who are deaf or hard of hearing.

![Figure 1. Co-worker’s sign language use reported by the two groups.](image)

Table 2 shows the variety of the participant’s occupations between gender. The majority of male participants were working in professional, scientific and technical occupations, or 30% and the majority of females were working in an educational occupation, or 22.2%.
Participant’s occupations by gender.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Male (n = 10)</th>
<th>Female (n = 36)</th>
<th>Total (n = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>20%</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td>Clerical and repairment</td>
<td>20%</td>
<td>8.3%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Restaurant and hotel</td>
<td>8.3%</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Delivering and storage</td>
<td>20%</td>
<td>11.1%</td>
<td>13%</td>
</tr>
<tr>
<td>Information and communication activities</td>
<td></td>
<td>2.8%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Professional, scientific and technical</td>
<td></td>
<td>2.8%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Public administration and defence, social security</td>
<td>5.6%</td>
<td></td>
<td>4.3%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>22.2%</td>
<td>17.4%</td>
</tr>
<tr>
<td>Health-and social services</td>
<td></td>
<td>13.9%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Cultural-, sports- and leisure activities</td>
<td></td>
<td>8.3%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Social organizations and other services</td>
<td>10%</td>
<td>5.6%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Tourism</td>
<td></td>
<td>5.6%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>5.6%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Communicational abilities in the workplace

Four statements were used to measure the participant’s experience in communicational difficulties among deaf and hard of hearing employees. The lowest score was 1 = *does rarely or never apply to me*, and the highest score was 5 = *does often or always apply to me*. A lower score indicated more communicational difficulties. Table 3 shows descriptive results for the statements concerning communication difficulties experienced by the participants.

Regarding the statement whether the employees could easily follow instructions from their supervisor, a great majority, or 76.3% reported that they could rather often, often or always easily follow instructions from their supervisor. Seven (18.5%) responded that they could rather seldom, rarely or never follow instructions from their supervisor. The total mean score for the sample was 4 (SD = 1.25).

Regarding the statement whether participant found it to be easy to communicate with more than two co-workers at the same time, the mean score was 3.33 (SD = 1.34). Nearly half of the respondents found it rather often, often or always to be easy to communicate with more than two co-workers at time, or 19 (48.7%).
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The total of the sample’s mean score for the statement whether the employees could socialize with their co-workers while working was 3.35 (SD = 1.31). Participants who said they could rather often, often or always socialize with their co-workers were in total 18 (48.6%). Being able to socialize with co-workers while working applied rather seldom, rarely or never to 10 (30%) of the participants.

Regarding the statement whether participants can easily understand what is said during meetings at the workplace, 23 (48.7%) thought it rather often, often or always applied to them. Participants who thought they could rather seldom, rarely or never understand what is said during meetings were in total six (15.8%). The mean score of the total sample was 3.65 (SD = 1.14).

Table 3.
Descriptive results for statements concerning communicational difficulties experienced by the participants.

<table>
<thead>
<tr>
<th></th>
<th>Rarely or never</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Rather often</th>
<th>Often or always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow instructions from supervisor</td>
<td>5.3% (n = 2)</td>
<td>13.2% (n = 5)</td>
<td>5.3% (n = 2)</td>
<td>28.9% (n = 11)</td>
<td>47.4% (n = 18)</td>
</tr>
<tr>
<td>It is easy to communicate with more than two co-workers at time</td>
<td>10.3% (n = 4)</td>
<td>20.5% (n = 8)</td>
<td>20.5% (n = 8)</td>
<td>23.1% (n = 9)</td>
<td>25.6% (n = 10)</td>
</tr>
<tr>
<td>Communicate with co-workers while working</td>
<td>10.8% (n = 4)</td>
<td>16.2% (n = 6)</td>
<td>24.3% (n = 9)</td>
<td>24.3% (n = 9)</td>
<td>24.3% (n = 9)</td>
</tr>
<tr>
<td>Understanding what is said during meetings</td>
<td>5.3% (n = 2)</td>
<td>10.5% (n = 4)</td>
<td>23.7% (n = 9)</td>
<td>34.2% (n = 13)</td>
<td>26.3% (n = 10)</td>
</tr>
</tbody>
</table>

Independent samples t-test was conducted to see if there was a difference between deaf and hard of hearing employees in experiencing communicational difficulties at the workplace. Table 4 shows the number of participants, mean
scores, standard deviation, degrees of freedom, t-scores and p-value for each statement regarding communication at the workplace.

Table 4.

*Independent t-tests on communicational difficulties between hard of hearing and deaf employees.*

<table>
<thead>
<tr>
<th>Hard of hearing employees</th>
<th>Deaf employees</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>n       M   SD</td>
<td>n       M   SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow instructions from supervisor</td>
<td>31 4.0 1.16</td>
<td>7 3.85 1.67</td>
<td>0.33</td>
</tr>
<tr>
<td>It is easy to communicate with more than two co-workers at time Communicate with co-workers while working Understanding what is said during meetings</td>
<td>32 3.1 1.33</td>
<td>37 4.28 0.95</td>
<td>-2.16</td>
</tr>
<tr>
<td>30 3.1 1.24</td>
<td>35 4.42 1.13</td>
<td>-2.58</td>
<td>0.21</td>
</tr>
<tr>
<td>31 3.4 1.13</td>
<td>36 4.42 1.15</td>
<td>-2.05</td>
<td>0.22</td>
</tr>
</tbody>
</table>

* *p* < 0.05.

There was only a significant difference between deaf and hard of hearing employees in communicating with more than two co-workers at time; *t*(37) = -2.16, *p* = 0.03, indicating that deaf employees found it more often to be easy to communicate with more than two co-workers at time.

The difference of the total scores for communicational difficulties for the two groups was also measured using an independent t-test for the difference. On average, the deaf employees experienced less communicational difficulties (*M* = 14.87, *SD* = 6.40), than the hard of hearing employees (*M* = 13.31, *SD* = 3.95). The difference between the two groups, was however not significant *t*(38) = -0.87, *p* = 0.38. The Levene’s test for equality of variances showed that there is no difference in the variance between the two groups, *p* = 0.42.

**Social support**

Five statements were used to assess the participant’s experience of social support. The scores ranged from 1 = *does rarely or never apply to me* to 5 = *does
often or always apply to me. Lower scores on social support indicated a lower level of social support. Table 5 shows the descriptive results for statements concerning social support experienced by the participants.

The first statement was whether the participants received support and help with assignments from co-workers, if needed. The total mean score was 3.48 (SD = 1.40). A majority of the participants or 18 (51.4%) responded that they rather often, often or always received support and help from co-workers when needed.

Regarding the statement whether participants received support or help with assignments from their supervisor, if needed, a majority, or 18 (54.6%) responded that they rather often, often or always received help from their supervisor. The mean score of the total sample was 3.60 (SD = 1.56).

Regarding the statement whether the participants can talk to their co-workers about problems at work, six participants. The majority felt they could rather often, often or always talk to their co-workers about problems at work, or 21 (60%) of the respondents. The mean score of the total sample was 3.74 (SD = 1.24).

Regarding whether participants could talk to their friends about problems at work, the mean score of the total sample was 3.11 (SD = 1.47).

Regarding the statement whether participants could talk to their spouse or someone closely related to them about problems at work, the mean score of the total sample was 3.93 (SD = 1.34). A majority of the participants, or 21 (65.6%) could rather often, often or always talk to their spouse or someone close to them about problems at work.
### Table 5.

*Descriptive results for statements concerning social support experienced by participants.*

<table>
<thead>
<tr>
<th></th>
<th>Rarely or never</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Rather often</th>
<th>Often or always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receives support and help from co-workers</td>
<td>11.4% (n = 4)</td>
<td>14.3% (n = 5)</td>
<td>22.9% (n = 8)</td>
<td>17.1% (n = 6)</td>
<td>34.3% (n = 12)</td>
</tr>
<tr>
<td>Receive support and help from supervisor</td>
<td>15.2% (n = 5)</td>
<td>12.1% (n = 4)</td>
<td>18.2% (n = 6)</td>
<td>6.1% (n = 2)</td>
<td>48.5% (n = 16)</td>
</tr>
<tr>
<td>Can talk to co-workers about problems at work</td>
<td>5.7% (n = 2)</td>
<td>11.4% (n = 4)</td>
<td>22.9% (n = 8)</td>
<td>22.9% (n = 8)</td>
<td>37.1% (n = 13)</td>
</tr>
<tr>
<td>Can talk to friends about problems at work</td>
<td>17.6% (n = 6)</td>
<td>17.6% (n = 6)</td>
<td>29.4% (n = 10)</td>
<td>5.9% (n = 2)</td>
<td>29.4% (n = 10)</td>
</tr>
<tr>
<td>Can talk to spouse or someone close to them about problems at work</td>
<td>6.3% (n = 2)</td>
<td>12.5% (n = 4)</td>
<td>15.6% (n = 5)</td>
<td>12.5% (n = 4)</td>
<td>53.1% (n = 17)</td>
</tr>
</tbody>
</table>

Table 6 shows the number of participants, mean scores, standard deviation, degrees of freedom, t-scores and p-value for each statement regarding social support.
Table 6.

Independent t-tests on social support between hard of hearing and deaf employees.

<table>
<thead>
<tr>
<th></th>
<th>Hard of hearing employees</th>
<th>Deaf employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>Receives support and help from coworkers</td>
<td>28</td>
<td>3.35</td>
</tr>
<tr>
<td>Receive support and help from supervisor</td>
<td>27</td>
<td>3.66</td>
</tr>
<tr>
<td>Can talk to coworkers about problems at work</td>
<td>20</td>
<td>3.68</td>
</tr>
<tr>
<td>Can talk to friends about problems at work</td>
<td>27</td>
<td>3.11</td>
</tr>
<tr>
<td>Can talk to spouse or someone closely related to them about problems at work</td>
<td>27</td>
<td>4.14</td>
</tr>
</tbody>
</table>

Independence t-test for difference revealed no significant difference between the two groups in any of the statements regarding social support.

The difference of the total scores for social support received by the two groups was also measured using an independent t-test for the difference. On average, the hard of hearing employees received a higher level of social support ($M = 20.27$, $SD = 6.67$) than the deaf employees ($M = 17.71$, $SD = 5.70$). The difference between the two groups, was however not significant $t(34) = 0.93$, $p = .35$. The Levine’s test for equality of variances showed that there is no difference in the variance between the two groups, $p = 0.47$. 
Job satisfaction among deaf and hard of hearing employees

Job demand

Seven statements were used to explore participants' experience of job demands. The scores ranged from 1 = *does rarely or never apply to me* to 5 = *does often or always apply to me*. Higher scores on job demand statements indicated higher job demands. Table 7 shows the descriptive results concerning job demand experienced by the participants.

Regarding whether participants experienced their job to be mentally challenging, the total mean score was 3.21 (SD = 1.22).

The statement whether participants must work at a rapid pace, had the total mean score of 3.19 (SD = 0.85). Most of the participants responded that they sometimes had to work at a rapid pace, or 18 (50%).

Regarding whether participants felt they had too little time to complete specific work tasks, the total mean score was 2.87 (SD = 1.19).

Regarding the statement whether participants felt their work tasks to be too difficult for them, the total mean score was 2.06 (SD = 0.86). A majority of participants rather seldom, seldom or never experienced their work tasks to be too difficult for them, or 20 (60.6%).

When participants were asked whether they felt worn out by the end of the working day, the most common answer was rather often, often or always (38.8%). The total mean score was 3.19 (SD = 1.26).

Concerning whether participants felt they had too much to do at their work, the total mean score was 3.33 (SD = 1.09). It was most common that the participants felt they rather often, often or always had too much to do (44.5%).

Regarding the statement whether participants felt their tasks to be monotonous, the total mean score was 2.63 (SD = 1.08).
Table 7.

**Descriptive results concerning job demand experienced by the participants.**

<table>
<thead>
<tr>
<th>Job is mentally challenging</th>
<th>Rarely or never</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Rather often</th>
<th>Often or always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.8% (n = 4)</td>
<td>13.5% (n = 5)</td>
<td>37.8% (n = 14)</td>
<td>18.9% (n = 7)</td>
<td>18.9% (n = 7)</td>
</tr>
<tr>
<td>work at a rapid pace</td>
<td>19.4% (n = 7)</td>
<td>50% (n = 18)</td>
<td>22.2% (n = 8)</td>
<td>8.3% (n = 3)</td>
<td></td>
</tr>
<tr>
<td>Have too little time to complete specific work tasks</td>
<td>18.2% (n = 6)</td>
<td>15.2% (n = 5)</td>
<td>33.3% (n = 11)</td>
<td>27.3% (n = 9)</td>
<td>6.1% (n = 2)</td>
</tr>
<tr>
<td>Work tasks are too difficult</td>
<td>33.3% (n = 11)</td>
<td>27.3% (n = 9)</td>
<td>39.4% (n = 13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling worn out by the end of the working day</td>
<td>11.1% (n = 4)</td>
<td>16.7% (n = 6)</td>
<td>33.3% (n = 12)</td>
<td>19.4% (n = 7)</td>
<td>19.4% (n = 7)</td>
</tr>
<tr>
<td>Have too much to do</td>
<td>8.3% (n = 3)</td>
<td>8.3% (n = 3)</td>
<td>38.9% (n = 14)</td>
<td>30.6% (n = 11)</td>
<td>13.9% (n = 5)</td>
</tr>
<tr>
<td>Work tasks are monotonous</td>
<td>15.2% (n = 5)</td>
<td>27.3% (n = 9)</td>
<td>45.5% (n = 15)</td>
<td>3% (n = 1)</td>
<td>9.1% (n = 3)</td>
</tr>
</tbody>
</table>

Table 8 shows the number of participants, mean scores, standard deviation, degrees of freedom, t-scores and p-value for each statement regarding job demands.
Table 8.

Independent $t$-tests on job demands between hard of hearing and deaf employees.

<table>
<thead>
<tr>
<th>Job Demand</th>
<th>Hard of hearing employees</th>
<th>Deaf employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>Job is mentally challenging</td>
<td>30</td>
<td>3.30</td>
</tr>
<tr>
<td>Work at a rapid pace</td>
<td>30</td>
<td>3.23</td>
</tr>
<tr>
<td>Have too little time to complete specific work</td>
<td>28</td>
<td>2.85</td>
</tr>
<tr>
<td>Tasks are too difficult</td>
<td>28</td>
<td>2.03</td>
</tr>
<tr>
<td>Feeling worn out by the end of working day</td>
<td>30</td>
<td>3.20</td>
</tr>
<tr>
<td>Have too much to do</td>
<td>29</td>
<td>3.31</td>
</tr>
<tr>
<td>Work tasks are monotonous</td>
<td>27</td>
<td>2.66</td>
</tr>
</tbody>
</table>

Independence $t$-test for difference reviled no significant difference between the two groups in any of the statements regarding job demands.

The difference of the total scores for job demand between the two groups were also measured using an independent $t$-test for the difference. On average, the hard of hearing employees scored higher on total job demand scores ($M = 19.9$, $SD = 5.22$), than the deaf employees ($M = 17.4$, $SD = 5.06$). The difference between the two groups on the total job demand scores was however not significant ($t(35) = 1.13$, $p = 0.26$). The Levene’s test for equality of variances showed that there is not a difference in the variance between the two groups, $p = 0.82$.

**Job control**

Four statements were used to explore participants experience on job control. The scores ranged from $1 = \text{does rarely or never apply to me}$ to $5 = \text{does often or always apply to me}$. Higher scores on the job control statements indicated high job control. Table 9 shows the descriptive results concerning job control experienced by the participants.
Regarding the statement whether participants could influence the amount of work to do, the total mean score was 3.33 (SD = 1.16). About half of the participants (47.2%) felt they could influence the amount of work to do.

Regarding the statement whether participants could set their own working hours, the total mean score was 2.62 (SD = 1.47). Participants that did rather seldom, rarely or never have flexible working hours were in total 18 (51.4%), and 13 (31.7%) responded rather often, often or always.

Concerning the statement whether participants could decide themselves when they would take a break, the total mean score was 3.36 (SD = 1.30). A total of 18 participants (47.4%) responded that they could rather often, often or always decide themselves when they would take a break, and eight (21.1%) responded rather seldom, rarely or never.

Concerning the statement whether participants could use alternative methods for doing their work, the total mean score was 3.86 (SD = 1.20). A majority of participants could often or always choose which method to use if there were alternative methods for doing their work, or 26 (70.2%).

Table 9.

<table>
<thead>
<tr>
<th></th>
<th>Rarely or never</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Rather often</th>
<th>Often or always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can influence the amount of work to do</td>
<td>11.1% (n = 4)</td>
<td>8.3% (n = 3)</td>
<td>33.3% (n = 12)</td>
<td>33.3% (n = 12)</td>
<td>13.9% (n = 5)</td>
</tr>
<tr>
<td>Can set their own working hours</td>
<td>34.3% (n = 12)</td>
<td>17.1% (n = 6)</td>
<td>11.4% (n = 4)</td>
<td>25.7% (n = 9)</td>
<td>11.4% (n = 4)</td>
</tr>
<tr>
<td>Can decide themselves when they’re taking a brake</td>
<td>13.2% (n = 5)</td>
<td>7.9% (n = 3)</td>
<td>31.6% (n = 12)</td>
<td>23.7% (n = 9)</td>
<td>23.7% (n = 9)</td>
</tr>
<tr>
<td>Can use alternative methods for doing their work</td>
<td>5.4% (n = 2)</td>
<td>10.8% (n = 4)</td>
<td>13.5% (n = 5)</td>
<td>32.4% (n = 12)</td>
<td>37.8% (n = 14)</td>
</tr>
</tbody>
</table>

Table 10 shows the number of participants, mean scores, standard deviation, degrees of freedom, t-scores and p-value for each statement regarding job control.
Table 10. 
*Independent t-tests on job control between hard of hearing and deaf employees*

<table>
<thead>
<tr>
<th>Can influence the amount of work to do</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Can set their own working hours</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Can decide themselves when they’re taking a brake</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Can use alternative methods for doing their work</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard of hearing employees</td>
<td>20</td>
<td>3.13</td>
<td>1.18</td>
<td></td>
<td>7</td>
<td>4.00</td>
<td>0.81</td>
<td>(34)</td>
<td>-1.81</td>
<td>0.07*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
<td>2.35</td>
<td>1.41</td>
<td>(33)</td>
<td>-2.30</td>
<td>0.02*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf employees</td>
<td>7</td>
<td>4.00</td>
<td>0.81</td>
<td></td>
<td>8</td>
<td>3.71</td>
<td>1.25</td>
<td>(33)</td>
<td>-2.30</td>
<td>0.02*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>3.75</td>
<td>0.88</td>
<td>(36)</td>
<td>0.93</td>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>3.62</td>
<td>1.06</td>
<td>(35)</td>
<td>0.63</td>
<td>0.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05.

There was a significant difference between deaf and hard of hearing employees on whether they could influence the amount of work to do; *t*(34) = 0.81, *p* = 0.07, indicating that deaf employees could more often influence the amount of work assigned to do, than hard of hearing employees.

There was also a significant difference between the two groups on whether they could set their own working hours; *t*(33) = 1.25, *p* = 0.02, indicating that deaf employees had more flexibility in working hours than hard of hearing employees.

The difference of the total scores on job control for the two groups were also measured using an independent *t*-test for the difference. On average, the deaf employees scored higher on the job control factor (*M* = 17.00, *SD* = 4.89), than the hard of hearing employees (*M* = 14.43, *SD* = 4.99). The difference between the two groups, was however not significant *t*(36) = -1.29, *p* = .20. The Levine’s test for equality of variance showed that there is no difference in the variance between the two groups, *p* = 0.72.

**Job satisfaction and well being**

One question was used to measure job satisfaction “how satisfied or unsatisfied are you with your current job?” The answers ranged from 1 = “very unsatisfied” to 5 = “very satisfied”. The participants mean score was 3.67 (SD =
Table 11 shows that most of the respondents were satisfied with their current job, or in total of 62.5% were either rather satisfied or very satisfied.

Table 11.

Job satisfaction among deaf and hard of hearing participants.

<table>
<thead>
<tr>
<th></th>
<th>Deaf (n = 9)</th>
<th>Hard of hearing (n = 31)</th>
<th>Total (n = 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very unsatisfied</td>
<td>6,5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Rather unsatisfied</td>
<td>11,1%</td>
<td>16,1%</td>
<td>15%</td>
</tr>
<tr>
<td>Neither satisfied or unsatisfied</td>
<td>33,3%</td>
<td>12,9%</td>
<td>17,5%</td>
</tr>
<tr>
<td>Rather satisfied</td>
<td>11,1%</td>
<td>38,7%</td>
<td>32,5%</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>44,4%</td>
<td>25,8%</td>
<td>30%</td>
</tr>
</tbody>
</table>

The Levene’s test for equality of variances showed that there is no difference in the variance between the two groups, $p = 0.98$. On average, deaf employees were more satisfied with their current job ($M = 3.88, SD = 1.16$), than the hard of hearing employees ($M = 3.61, SD = 1.22$). However, the difference was not significant $t(38) = -0.59$, $p = 0.55$.

Regarding to whether participants perceived themselves to be discriminated against by their employers, the scores ranged from 1 = “not at all” to 5 = “very much”. The participants mean score was 3.67 (SD = 1.20). Figure 3 shows the distribution between deaf and hard of hearing participants in experiencing discrimination by their supervisor. The majority perceived very little or no discrimination at all (32.5%), and 25% experienced rather little discrimination by their employers. However, 17.5% experienced rather much discrimination, and 5% perceived very much discrimination.
Figure 3. Distribution in experiencing discrimination by supervisor.

The Levine’s test for equality of variances showed that there is not a difference in the variance between the groups, $p = 0.59$. On average, deaf employees felt more discriminated against by their supervisor ($M = 3.33, SD = 1.32$), than hard of hearing employees ($M = 2.09, SD = 1.10$). The difference between the two groups was significant $t(38) = -2.82, p = 0.007$.

Regarding whether participants experienced psychological strain for the last six months, the scores ranged from 1 = “not at all” to 5 = “very much”. The participants mean score was 2.65 (SD = 1.45). Table 12 shows the percentage of deaf and hard of hearing participants in experiencing psychological strain for the last six months.

Participants who experienced no psychological strain at all were 30%, 20% experienced psychological strain only to a small amount, and 22.5% experienced a little psychological strain. However, 10% experienced rather much psychological strain and 17.5% experienced very much psychological strain.
Table 12.
Psychological strain experienced by deaf and hard of hearing participants in percentages.

<table>
<thead>
<tr>
<th></th>
<th>Deaf (n = 9)</th>
<th>Hard of hearing (n = 31)</th>
<th>Total (n = 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>33.3</td>
<td>29.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Only to a small amount</td>
<td>22.2</td>
<td>19.4</td>
<td>20.0</td>
</tr>
<tr>
<td>A little</td>
<td>33.3</td>
<td>19.4</td>
<td>22.5</td>
</tr>
<tr>
<td>Rather much</td>
<td>12.9</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Very much</td>
<td>11.1</td>
<td>19.4</td>
<td>17.5</td>
</tr>
</tbody>
</table>

The Levine’s test for equality of variances showed that there is no difference in the variance between the two groups, $p = 0.34$. On average, the hard of hearing employees experienced more psychological strain for the last six months ($M = 2.74$, $SD = 1.50$), than the deaf employees ($M = 2.33$, $SD = 1.32$). However, the difference between the two groups was not significant $t(38) = 0.73$, $p = 0.46$.

Table 13 shows the participants number of days in sick-leave taken in percentages. Of the 46 valid responses, 28.3% of the participants had not taken sick-leave for the past six months.

Table 13.
Participants number of days of sick leave taken.

<table>
<thead>
<tr>
<th></th>
<th>Male (n = 10)</th>
<th>Female (n = 36)</th>
<th>Total (n = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>40%</td>
<td>25%</td>
<td>28.3%</td>
</tr>
<tr>
<td>1-5 days</td>
<td>30%</td>
<td>41%</td>
<td>39.1%</td>
</tr>
<tr>
<td>6-10 days</td>
<td>11%</td>
<td>2.8%</td>
<td>8.7%</td>
</tr>
<tr>
<td>11-20 days</td>
<td>20%</td>
<td>2.8%</td>
<td>6.5%</td>
</tr>
<tr>
<td>21-30 days</td>
<td>5.6%</td>
<td>4.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>1-2 months</td>
<td>2.8%</td>
<td>2.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Have not worked for the past 6 months due to illness</td>
<td></td>
<td></td>
<td>8.3%</td>
</tr>
<tr>
<td>Have not worked for the past 6 months for other reasons</td>
<td></td>
<td></td>
<td>10%</td>
</tr>
</tbody>
</table>
The Levine’s test for equality of variances showed that there is no difference in the variance between the two groups, $p = 0.64$. On average, the deaf employees took more days in sick-leave ($M = 3.20$, $SD = 2.65$), than the hard of hearing employees ($M = 2.89$, $SD = 2.57$). The difference was however not significant $t(44) = 0.64$, $p = 0.73$.

**Discussion**

The current study offered an insight into the job satisfaction and well-being among deaf and hard of hearing employees. The primary goal of the study was to see if deaf employees were different from hard of hearing employees in regards to job satisfaction and well-being. It was also a goal to examine whether there was a difference between deaf and hard of hearing employees in experiencing communicational difficulties at their workplace, lack of social support from co-workers and supervisors, job demand and job control.

A majority of the participants had completed a higher level of education, for example were 15 individuals who were undergraduates and six postgraduates. In similarity to Dowler & Walls (1996), the participants were employed in a variety of jobs. The majority had worked at the same workplace for more than five years, and eight of the participants reported being employed at the same workplace for 15 years or more. The most common working hours per week was 40 hours, and four participants reported working 50 hours or more per week. On average, male participants in the study worked more hours per week than the female participants.

The first hypothesis, whether there was a difference between deaf and hard of hearing employees in experiencing job satisfaction was not supported. There was not a significant difference between the two groups. In general, deaf and hard of hearing employees were rather satisfied or very satisfied with their current job. Several studies have demonstrated that high level of social support could be an important factor in reducing negative affect in the labour market (Danermark & Gellerstedt, 2004; Nachtegaal et al., 2012). Social support was evaluated to be rather much among deaf and hard of hearing employees, and the job satisfaction could be moderated by the high social support received by the participants.
The second hypothesis, that there was a difference between deaf and hard of hearing employees in experiencing psychological strain for the last six months was not supported. Despite there was a large amount of deaf and hard of hearing employees that found their job to be mentally challenging, and felt worn out by the end of the working day, the majority of deaf and hard of hearing employees felt little or no psychological strain for the last six months. These findings are in contrast with the results of Kramer et al. (2006), where there was a higher prevalence of psychological distress among deaf and hard of hearing employees than for their hearing colleagues. It could be necessary to examine psychological distress using standardized assessment and see whether there is a difference between employees with auditory difficulties and employees without auditory difficulty. The participant’s evaluation of psychological strain could have been moderated by high levels of social support and overall little communicational difficulties.

The third hypothesis, whether deaf employees experience more discrimination by their supervisor, than hard of hearing employees was supported. There was a significant difference between the two groups, where some of the deaf employees reported being rather much or very much discriminated against, but the hard of hearing group experienced rather little discrimination. In similarity with Lussier et al. (2000) and Punch et al. (2007), a majority of the participants felt discrimination at some level at their workplace, where they responded that they had experienced being treated differently from their hearing colleagues. In contrast with the results of Haynes & Linden (2012) and Punch et al. (2007), the participants in the current study received much social support from both their co-workers and supervisors, raising the question in which way deaf employees feel treated differently. As Lane (2005) describes the reason for discrimination is rather the linguistic difference and lack of adjustments, than the hearing loss itself, it would be interesting to add questions about whether the needs for adjustments at the workplace are being met.

The fourth hypothesis, that deaf employees experience more communicational difficulties than hard of hearing employees was not supported. There was not a difference between the two groups. In contrast with Punch et al. (2007) and Wells et al. (2009), the deaf employees in this study scored overall high.
on the communicational statements. The reason could be that a majority of the employees who were deaf in this study, reported that few or all of their co-workers could use sign language. Based on the findings of Punch et al. (2007) and Wells et al. (2009), the employees who felt they had communicational difficulties may feel isolated in their workplace, especially if their co-workers do not use sign language or if they receive little support from their co-workers.

The fifth hypothesis, that hard of hearing employees experience more social support than deaf employees was not supported. There was not a significant difference between the two groups, however hard of hearing employees received overall more social support than employees who were deaf. In general, deaf and hard of hearing employees in the sample received rather much social support.

The last hypothesis, whether employees that are hard of hearing experience more job demand and less job control than employees that are deaf, was not supported. There was not a significant difference in job demand and job control experienced by the two groups.

Although the findings in this study gave insight into the job experience of employees who are deaf and hard of hearing, there were also several limitations. First, the sample size was rather small, and therefore conclusions cannot be drawn from the results to the whole population of individuals who are deaf or hard of hearing. Thus, it is possible that the study was unable to identify the mean differences between the groups. Second, some participants found it difficult to understand some of the questions and were excluded from the statistical analysis. For example, both questions used from the Amsterdam Checklist for Hearing and Work were excluded. It could be helpful for them if the questions were followed by a sign language interpreting video. It could also give researchers more detailed information using both quantitative and qualitative method. Third, many of the measures of the study were originally made by the researchers and the psychometric properties of the questionnaire has not been tested. The measures of the study were self-reported, which might lead to biases. Fourth, the participants were organized into two groups, i.e. individuals who responded being deaf on the one hand, and individuals who reported being hard of hearing on the other hand. The problem was that some of the individuals in the hard of hearing group, reported that they both use
spoken language and sign language for communication. Hence, it would be ideal to have three groups (i.e. employees who are hard of hearing and use spoken language, employees who are hard of hearing and use both sign language and spoken language, and employees who are deaf).

The study also has some strengths. The present study was accomplished due to limited existing research in hope to raise interest among other researchers on this matter. To the researcher’s best knowledge, there are no studies available focusing on job experience and job satisfaction among employees who are deaf or hard of hearing in Iceland. Therefore, this study might increase reader’s insight on the experiences of employees who are deaf or hard of hearing in Iceland.
References


JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

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JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

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http://dx.doi.org/10.1093/deafed/enm011
JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES


Kæri þátttakandi.

Hér á eftir koma spurningar sem flestar eru á einn eða annan hátt tengdar ánægju og velliðan í starfí. Könnunin er hluti af lokaverkefni mínu í sálfræði við Háskólann í Reykjavík, þar sem ég skoða andlega líðan dörf og heyrnaskertra á vinnumarkaði.

Með því að hefja könnunina samþykktir þú þátttökuna þína. Þér er frjálst að hætta þátttökunana hvernei sem er. Könnunin er nafnlaus og ekki verður hægt að rekja svör til einstaklinga. Öllum gögnum verður eytt að úrvinnslokinni.

Ég yrði mjög þakklát ef þú gæfr þér tíma til að svara, þín skoðun er mér mikilvæg. Svartími könnunarinnar er um 15 mínútur, en getur þó verið mismunandi eftir svarendum. Ef þú hefur einhverjar spurningar eða vangaveltur í tengslum við könnunina, er þér frjálst að hafa samband við mig í gegnum tölvupóst sem tilgreindur er hér að neðan.

Kærar þakkir fyrir tíma þínn og stuðning,

Þóra Ósk Böðvarsdóttir

thorab14@ru.is
1. Hvert er fæðingarár þitt? ______________
2. Hvert er kyn þitt?
   o Karl
   o Kona
3. Hvert af aftirfarandi staðhæfingum á best við þig?
   o Ëg notast við heyrnartæki í daglegu lifi en tjáí mig með töluðu máli og táknmáli
   o Ëg er döfð, en notast við heyrnartæki og tjáí mig nær eingöngu með táknmáli í daglegu lifi
   o Ëg er döfð (ëg hef litla sem enga heyrn og nota nær eingöngu táknmál í daglegu lifi
   o Ëg er heymarskert/ur en notast ekki við heyrnartæki í daglegu lifi og tjáí mig með töluðu máli.
4. Hver er hæsta prófráða sem þú hefur lokið?
   o Grunnskólapróf
   o Sveinspróf í iðngrein
   o Meistarapróf í iðngrein
   o Stúdentspróf
   o Annað próf á framhaldsskólastígi
   o Grunnpróf úr háskóla (t.d. BA-, BS- eða B.E.d.-próf)
   o Meistarapróf úr háskóla (t.d. MA-, MS-, Kandíðatspróf eða M.Ed.- próf)
   o Doktorspróf
   o Önnur menntun – hver? ________________________________
5. Vinsamlegast svaraðu aftirfarandi spurningum um stöðu þína (merktu í þá reiti sem eiga við um þig og athugaðu að hægt er að merkja í fleiri en einn reit). Ert þú...
   Launþegi
   atvinnurekandi
   Í námi
JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

Heimavinnandi að meginstarfí
Í fædingarorlofi
Veik/ur eða tímarandið ófær til vinnu
Á eftirlaunum/ ellilifeyrisþegi
Í hlutasarfí
Í fullu starfí
atvinnulaus

6. Hvað af eftirfarandi starfsheitum lýsir starfí þínu best?
   o Landbúnaður eða sjávarútvegur
   o Byggingarstarfsemi og mannvirkjagerð
   o Verslun og viðgerðarþjónusta
   o Rekstur gististaða og veitingarekstur
   o Flutningur og geymsla
   o Upplýsingar og fjarskipti
   o Fjármála og vátryggingarstarfsemi
   o Fasteignavíðskipti
   o Sérfræðileg, viðindaleg og teknileg starfsemi
   o Leigustarfsemi og ýmis sórafða þjónusta
   o Opinber stjórnarþýsla og varnarmál, almannatryggningar
   o Fæðaslustarfsemi
   o Heilbrigðis- og félagsþjónusta
   o Menningar-, líbróta-, og tömsundastarfsemi
   o Félagsamtök og önnur þjónustustarfsemi
   o Ferðaþjónusta
   o Annað, hvað? _______________________

7. Ert þú í stjórnunarstöðu?
   o Já
   o Nei

8. Ert þú sjálfstætt starfandi
   o Já
JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

- Nei

9. Í hversu mörg ár hefur þú unnið á núverandi vinnustað? _______

10. Nýtist menntun þín í núverandi starfi?
   - Já
   - Nei


12. Hversu stór er vinnustaðurinn þinn?
   - Færri en 10 starfsmenn
   - 11-20 starfsmenn
   - Fleiri en 20 starfsmenn

13. Kunna eða nota samstarfsfélagar þínir táknmál?
   - Já, allir
   - Já, nokkrir
   - Já, en mjög fáir (1-3 manneskjur)
   - Nei, enginn
   - Á ekki við (ég nota ekki táknmál)

14. Hversu marga daga, ef einhverja, hefur þú verið frá launadri vinnu vegna eigin veikinda á síðastliðnum 6 mánuðum?
   - Ég hef ekki verið frá vinnu vegna eigin veikinda á síðustu 6 mánuðum
   - Um 1-5 daga
   - Um 6-10 daga
   - Um 11-20 daga
   - Um 21-30 daga
   - Um 1-2 mánuði
   - Um 3-4 mánuði
   - Um 5 mánuði eða meira
   - Hef ekkert unnið síðustu 6 mánuðu af öðrum ástæðum
15. Hversu oft, ef einhvern tíman eiga eftirfarandi fullyrðingar um þig?

<table>
<thead>
<tr>
<th>Á mjög</th>
<th>Á fremur</th>
<th>Á</th>
<th>Á fremur</th>
<th>Á oft eða</th>
<th>Á ekki</th>
</tr>
</thead>
<tbody>
<tr>
<td>sjaldan eða</td>
<td>sjaldan</td>
<td>stundum</td>
<td>oft við</td>
<td>alltaf við</td>
<td>við</td>
</tr>
<tr>
<td>aldrei við</td>
<td>við um</td>
<td>við um</td>
<td>um mig</td>
<td>um mig</td>
<td></td>
</tr>
<tr>
<td>um mig</td>
<td>mig</td>
<td>mig</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Ég á
auðvelt með
að fylgja
fyrirmælum
frá yfirmanni
minum

b. Ég á
auðvelt með
að taka þátt í
samræðum
við fleiri en
tvo
vinnufélaga í
eini

c. Ég tek þátt
i félagslegum
samræðum á
kaffistofunni

d. Ég get
blandað geði
(átt samræður
við)
vinnufélagana
á meðan ég er
að vinna

41
e. Êg á
auðvelt með
að skilja hvað
er sagt á
vinnufundum

f. Mér finnst
ég vera lagin
við að hafa
göð samskipti
við
skjólstæðinga/
viðskiðptavini

| 16. Hversu oft, ef einhvern tíman eiga aftirfarandi fullyrðingar um þig? |
|---------------------|---------------------|---------------------|---------------------|---------------------|
| Á mjög              | Á fremur            | Á fremur            | Á oft               | Á ekki              |
| sjaldan             | sjaldan             | stundum             | oft við             | eða                 |
| eða                 | við um              | við um              | um mig              | alltaf               |
| aldræi              | mig                  | mig                  | við um              | við um              |
| við um              | mig                  | mig                  | mig                 |                     |

a. Færð þú
stuðning og hjálp
með verkefni hjá
vinnufélögum
þínum, ef þarf á að
halda?
b. Færð þú
stuðning og hjálp
með verkefni hjá
næsta yfirmanni
þínum, ef þarf á að
halda?
JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

c. eru vinnufélagar þínir tilbúnir að hlusta á vandamál sem við er að glíma í vinnunni, ef þarf á að halda?
d. Getur þú talað við vini þína um vandamál í vinnunni, ef þarf á að halda?
e. Getur þú talað við maka þinn eða einhvern nákominn um vandamál í vinnunni, ef þarf á að halda?
f. Lætur næsti yfirmaður þínn þig vita ef þú stendur þig vel í starfinu?

17. Hversu oft, ef einhvern tíman eiga aftirfarandi fullyrðingar um þig?

<table>
<thead>
<tr>
<th>Á mjög</th>
<th>Á fremur</th>
<th>Á</th>
<th>Á fremur</th>
<th>Á oft eða</th>
<th>Á ekki við</th>
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</thead>
<tbody>
<tr>
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<td>Á</td>
<td>stundum</td>
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<td>allt við</td>
</tr>
<tr>
<td>eða aldrei</td>
<td>við um</td>
<td>Á</td>
<td>við um</td>
<td>við um mig</td>
<td>mig</td>
</tr>
<tr>
<td>við um mig</td>
<td>við um mig</td>
<td>Á</td>
<td>mig</td>
<td>um mig</td>
<td></td>
</tr>
</tbody>
</table>

a. Er vinnan þin andlega krefjandi?
(með andlega krefjandi er átt við t.d. stressandi)
### JOB SATISFACTION AMONG DEAF AND HARD OF HEARING EMPLOYEES

| b. Er vinnan þin meira krefjandi fyrir þig en heyrandi vinnufélaga þína? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| c. verður þú að vinnu á miklum hraða? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| d. Hefur þú of litinn tíma til að klára ákveðin verkefni? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| e. Eru verkefnið of erfið fyrir þig? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| f. Finnst þér þu vera örmagna af þreytu í lok vinnudags? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| g. Finnst þér þu hafa of mikið að gera í vinnunni? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| h. Eru verkefnið sem þú færð í vinnunni einhæf? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| i. Nýtist þekking þin og færni (eða menntun) í starfinu? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**18. Hversu oft, ef einhvern tíman eiga eftirfarandi fullyrðingar um þig?**

<table>
<thead>
<tr>
<th>Æ mjög</th>
<th>Á fremur</th>
<th>Á</th>
<th>Á fremur</th>
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<td>eða</td>
<td>við</td>
</tr>
<tr>
<td>eða</td>
<td>við um</td>
<td>við um</td>
<td>um mig</td>
<td>alltaf</td>
<td>við um</td>
</tr>
</tbody>
</table>
| aldrei | mig | mig | mig | mig | }
### Job Satisfaction Among Deaf and Hard of Hearing Employees

<table>
<thead>
<tr>
<th></th>
<th>Við um mig</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Getur þú stjórnað því hvað þú hefur mikið að gera?</td>
</tr>
<tr>
<td>b.</td>
<td>Getur þú sjálf/ur ráðið vinnutímanum þinum?</td>
</tr>
<tr>
<td>c.</td>
<td>Getur þú ráðið því hvenær þú tekur þér vinnuhlé/pásur?</td>
</tr>
<tr>
<td>d.</td>
<td>Getur þú ráðið því hvernig þú ferð að ef unnt er að leysa verkefni á mismunandi vegu?</td>
</tr>
<tr>
<td>e.</td>
<td>Getur þú sjálf/ur ráðið vinnutímanum (er sveigjanlegur vinnutími?)</td>
</tr>
<tr>
<td>f.</td>
<td>Getur þú tekið flóknar ákvarðanir sem tengjast starfinu?</td>
</tr>
</tbody>
</table>

19. Hversu ánægð/ur eða óánægð/ur ertu í núverandi starfi?
   - Mjög óánægð/ur
   - Fremur óánægð/ur
20. Hefur þú upplifað að komið sé verr fram við þig en heyrandi samstarfsfölki af yfirmönnum?
   o Mjög lítið eða alls ekki
   o Fremur lítið
   o Hvorki né
   o Fremur mikið
   o Mjög mikið

21. Hefur þú fundið fyrir streitu af einhverju tagi síðastliðna 6 mánuði? (Með streitu er átt við að fólk sé spennt, eirðarlaust, taugaóstyrkt, kvíðið eða geti ekki sofið á nóttunni fyrir áhyggjum).
   o Alls ekki
   o Aðeins að litlu leyti
   o Dálitið
   o Frekar mikið
   o Mjög mikið
Ágæti viðtakandi.

Nafn mitt er Þóra Ósk Böðvarsdóttir og ég er Bs sálfræðinemi við Háskólan í Reykjavík. Ég er að vinna að lokaverkefni mínu, þar sem ég skoða upplifun dóff og heyrnaskertra á vinnumarkaði.

Könnun þessi er ætluð þeim einstaklingum sem eru annað hvort Dóff eða heyrnaskertir. Mér þætti vænt um að þú gætir séð þér fært um að svara þessari könnun.

Hér fyrir neðan er tengill á könnunina. Flestar spurninganna snúa að líðan og ánægju í starfi og eru teknar úr Norræna Spurningarlistanum um sálfélagslega þætti í vinnunni. Könnunin er nafnlæs og er ekki rekjanleg á einstaklinga eða tölvur.

Smellið á tengilinn til að hefja könnunina: [http://www.questionpro.com/t/ANsWKZazWG](http://www.questionpro.com/t/ANsWKZazWG)

Ég hvet ykkur til að taka þátt í þessari könnun og svara af einlægni svo ég fái rétta sýn á líðan Dóff og heyrnaskertra á vinnumarkaði.

Með fyrirfram þakklæti,

Þóra Ósk Böðvarsdóttir.