A SUMMARY OF BEST PRACTICES FOR DEAF PROFESSIONALS IN THE STEM FIELDS

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This guide will have you learn the following:

Deaf professionals face the following risk factors in the workplace (6):

1. Audism and linguicism
2. Networking challenges
3. Additional workload in managing one's accommodation
4. Promotion limitations

Those risk factors directly come from the communication barrier, so that the lived experiences and cultural norms of deaf people are different from that of hearing people. This not unique to the study of Kurz et al 2016 (6) in the United States, as Napier (2020) has reported similar themes in Ireland, Scotland and Germany as part of an Erasmus+ programme-funded research project (13). This project (abbreviated DESIGNS) had themes that have identified for deaf signers employed in the workplace (13):

- Barriers to employment/to or because of interpreting provision
- Strategies that were employed by key stakeholders
- Positive and negative aspects of the familiarity of the job and with each other

Those themes have been identified in the usual employment pathways of 1:1 meetings, group meetings, progression, conflict and social settings. The underlying gaps have been identified as:

- In knowledge
- Organization culture
- Lack of experience
- Feedback mechanisms

To mitigate those risks, the protective factors have been identified for deaf professionals (6):

1. Social support
2. Role models
3. Optimism (translated from ASL as "Deaf can")

Those protective factors along with identified gaps will be described further.

<u>Protective Factor 1: Social support mechanisms</u>

Consider those quotations from literature, as noted in Lussier et al (2000), quoted:

"Where there is a group discussion or conversations, both social or work related, I generally get left out, then get summary from one person later"…by an employee who is deaf." (9).

As well as the title of Majocha et al (2018), with an 18-year interval between the two journal articles, as quoted:

"Everyone was nice…but I was still left out" (11).

A social support system needs to be in place as a protective factor (6). This is associated with the theme of relatedness need (as in Alderfer's ERG theory) (9). This can be made available mainly in two ways: deaf colleagues (to avoid tokenism) or colleagues who are allies in the workplace (6, 8, 16).

This can be applied to the broad area of information sharing including incidental learning. A common example of incidental learning is the workplace chatter, which is limited to verbal communication (4, 6, 9, 10). Those who are generous with this information allows the deaf professional to be included in "watercooler" workplace chatter (as noted by Foster (1992) in 4, 6, 9).

Having a social support system (the protective factor) in place is essential to job satisfaction and integration with colleagues (as recognized by Foster (1992) in 4). Once it is emphasized that information sharing is important, then the networking that is set up allows the deaf professional to access this kind of information is enabled.

Protective Factor 2: Role models

Sharing critical information on how to function in the workplace can be learned through role models or mentors (5, 6, 8, 10). With the required assertive involvement by the Deaf employee to identify and recruit role models, this then leads to a network (this is the key part). Role models connected to such networks can then arrange meetings with other STEM professionals or hearing allies who can potentially be important advocates for the Deaf professional(s) (8). Such advice that can be provided typically includes (4, 8, reviewed in 15, 16):

- Self-advocacy skills
- How to be a scientist (STEM knowledge)
- Social norms
- Develop 'navigation capital'
- Accessibility requests

The advice shared above are also strategies shareable and applicable to the workplace (6).

Due to the phonocentric hegemony and limited awareness of ASL and deaf culture, the social norms in the academic STEM culture should be provided (7, 8, 17). An example is the capacity to identify cues and nuances of communication and behaviour in the environment (8, 17).
'Navigation capital' is a term identified by Listman & Dingus-Eason (2018) as the approach to prepare deaf professionals before entering academic STEM culture (8). Ways to do this can include (8):

- Introductions in meetings with vendors of scientific equipment
- Share personal narratives that include challenges in accessibility

Listman & Dingus-Eason (2018) suggest that quality interpreting enables access to navigational capital in the academic STEM culture (8). The key here is to determine when to do feedback and share concerns or this was not working well as part of making requests for accessibility.

Lack of knowledge or information about accessibility (formally called duty to accommodate) was identified by Geyer & Schroedel (1999) as an important reason why lack of accessibility in the workplace was occurring. This availability appears to vary due to factors (2):

- Type of occupation
- Education level
- Needs of the employee
- Size and type of employer

An excellent example of a developed strategy is describing Deaf culture in an applied anatomy module. This was developed for first-year medical students as part of training in cultural competence and communication skills to work with diverse populations. The approach taken was a panel of culturally deaf, hard of hearing and hearing children of deaf adults sharing experiences and perspectives in health

care with challenges faced with communication and care (3). As well, a lecture session was presented that included:

- Deaf culture
- ASL as a language
- How the brain processes both spoken and signed language
- Variable success of cochlear implants
- Language deprivation

This training demonstrated improvement in knowledge measured through surveys (3).

Moreover, this strategy can meet a curriculum requirement by the accrediting body of medical institutions (Liaison Committee on Medical Education). This requirement includes education on diverse cultures and belief systems, addressing health disparities for underserved populations and skills to provide care effectively to diverse patient populations.

Protective Factor 3: Optimism or "Deaf can"

This is optimism in a sense, to focus on thinking of the strengths you bring to the workplace (6, 9). Another perspective can also be taken, commonly termed "deaf gain" to reframe what deaf employees bring to the workplace (16).

One feature of deaf gain is that deaf people have persisted over thousands of generations and we are everywhere on Earth (1). This question can prompt us to discuss why this is so. Within the framework of genetics, it is known that the mutated Cx26 gene, the well-known deaf gene, is associated with individuals who have thicker skin (1, 12). This property has the benefit of protecting against bacterial infections and wounds are healed at a faster pace (1). This has to do with sweat hyperosmolarity with an osmotic environment not favourable for bacterial growth and is a stronger mechanical barrier that needs to be overcome (12). Reflecting this genetic framework of being deaf shows the issues are social, as part of society's frameworks in place.

Moreover, to determine the contributions of deaf professionals, one can refer to literature for examples in your specific field. By 2023, there have been 809 doctoral degrees by deaf professionals, from the earliest doctoral degree in law by Charles Bonnet by 1743, available at tinyurl.com/deaf-docs (14).

Acknowledgments

This best practices guide was supported with funding from BCIT's Learning and Teaching Innovation Grant.

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