International Journal of Community Medicine and Public Health
*Alharbi R. Int J Community Med Public Health. 2020 Apr;7(4):1276-1286*
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20201432

**Original Research Article**

# Assessment on the perceived self-esteem of Saudi adults with deafness and hard of hearing

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**Received:** 29 January 2020
**Revised:** 06 March 2020
**Accepted:** 07 March 2020

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## ABSTRACT

**Background:** Hearing is an important sense that individuals depend on in their day-to-day activities. However, labeling and stigmatization can disturb the perceived self-esteem of a deaf person, particularly in a predominantly hearing environment. As such, this study explored the of deaf Saudi people's perceived self-esteem.
**Methods:** One hundred and one participants took part in the study and answered the questionnaire sent to each participant online. The data was analyzed using IBM SPSS version 23.
**Results:** This study showed that about half of them felt proud to belong in the deaf community. In terms of their perceived self-esteem, they wish to have more self-respect although half of them strongly disagreed that they feel useless at times. Likewise, 50% of the study group felt the sense of belongingness as they interact with the hearing community. Statistical analysis revealed no significant difference between perceived self-esteem and age, gender, and having hearing loss at birth, regardless whether with oneself, or with deaf or hearing community. On the other hand, there is a significant difference in the degree of hearing when using hearing aid upon interaction with the deaf community and in the mode of communication with their parents.
**Conclusions:** The use of hearing aid plays a great role in improving the communication skills of deaf people. Likewise, increased communication with their family, whether deaf or not, can potentially increase their self-worth. Introduction of deaf or hard of hearing role models and the use of other senses, such as sight and sensation, can be utilized to improve positive self-esteem.

**Keywords:** Deaf or hard of hearing, Self-esteem, Belongingness, Hearing aid

## INTRODUCTION

Hearing is one valuable sense that a person can depend on in their day-to-day relations with other people. It receives all outside stimuli as well as our daily involvement with other people and is one of the hardest losses that a human can experience in his or her life.[1] Loss of hearing can bring forth the incapability to link to other people via speech along with deafness.[1,2] As defined by Reynolds and others, 'Deaf' when capitalized refers to people who are sternly deaf and utilize sign language as a primary means of communicating to other people. On the other hand, 'deaf' with small letter 'd' pertains to people with moderate loss of hearing, who can express themselves who can express themselves in a normal conversation. In Saudi Arabia, people are identified as deaf or hard of hearing (D/HH) based on the profoundness of their loss of hearing.[3-6]

Self-esteem, which is expressed using self-confidence, is a primary element of a good mental health. It can be a vital idea as it has a universal and influential effect on human cognition, behavior, motivation, and emotion.[7] An important aspect that can have a diminishing effect on a

person's self-esteem is his or her association in a marginalized group.[8] A marginalized group comprises of people who possess one or more features and are in a lower societal position aside from a more powerful non-marginalized group.[9]

There is substantial attention in the perceived self-concept of a deaf person. Positive notion of self is linked with an increment of positive change and decreased psychosocial dilemma, despite the stresses bring forth by challenges in communication and the marginalized status in a principally hearing environment.[10] Labeling and stigmatization have been referred to as crucial instruments that could disturb a deaf person's perceived self-esteem, particularly when a deaf person is mixed in a principally hearing environment. Being labeled as 'deaf' may have a detrimental effect on his or her perceived self-esteem because, in a hearing society, it is regarded as a denounced characteristic. When deaf people are obliged to adjust mostly into hearing society, sign language or involvement in the Deaf community becomes more difficult to learn.[11]

Although there are many studies on deaf person's perceived self-esteem, little is known on deaf people living in Saudi Arabia. As such, this study aims to explore deaf people's self-esteem in Saudi Arabia.

## METHODS

### *Participants and procedures*

Individuals who are D/HH (n=150) were recruited for the study. Out of 150 recruited participants, at least 97 was required to obtain a confidence level of 90% within±5% margin of error. For this study, 101 individuals completed the online survey from November 2019 to January 2020. This study was approved by General Directorate of Education in Jeddah. The questionnaire, which was adapted from Jambor et al was utilized in the conduct of this study.[9] Selection criteria included the following participants who have D/HH, resides in Saudi Arabia, and aged between 18 to 60 years old. Excluded in this study are those non-Saudi participants and those aged less than 18 years old. Since this is an online -based study, the respondents cannot be considered as representative of the Saudi deaf population at large. Likewise, majority of the participants were male, which means that the female respondents cannot be considered as representative of the Saudi deaf women population at large.

Questionnaires were also filled using an online platform. All participants surveyed gave their informed consent and participated in the study. To identify the deaf people's self-esteem in Saudi Arabia, this study used a method converting the following question to a scale of 0-3 where 0 is the lowest and 3 is the highest. This scale is computed by simple additive method and compared to the demographics and factors affecting the deaf people's self-esteem.

### *Data analysis*

The data gathered were entered and evaluated via IBM SPSS version 23 (IBM Corp, Armonk, NY). Counts and percentages was utilized to define the characteristics of both nominal and categorical variables whereas mean and standard deviations were used for continuous variables. In terms of comparison of group means for at least two groups, this study used an independent *t*-test and one-way analysis of variance (ANOVA), with least significant difference (LSD) as a post hoc test, respectively. Normal distribution was assumed upon duration of the test. On the other hand, Games Howell for multiple groups and Welch's *t*-test for two group means were utilized as a substitute for the LSD test. Pearson's correlation coefficient was utilized in correlating variables represented by means. Finally, a $p<0.05$ was considered in rejecting the null hypothesis.

## RESULTS

In this research, almost half of the respondents live in Makkah, Saudi Arabia, followed by a considerable amount of participants Jeddah (21.8%) and Riyadh (16.8%) as shown in Table 1. The group of participants is presented by a higher number of men (88.1%) as well as those aged between 20 to 30 years old. Majority of the respondents (92.1%) were born with hearing loss. Meanwhile, other participants lose their sense of hearing at the age of 9.80±3.1.

As provided in Table 2, about 3 in every 5 participants have profound hearing loss whether with or without hearing aid, whereas one-third of all the respondents have severe hearing loss. Near half (44.6%) of all the participants have attended conventional school with oral approach in communication. In terms of communicating with their parents, about half (50.5%) of them have mentioned sign language as their main approach of communication.

In terms of their perceived self-esteem, as indicated in Table 3, about half of them strongly disagreed that they feel useless at times and thought that they are no good at all. Likewise, about half of them felt worthy of themselves, at least on an equal basis with others. More than half of them strongly disagree on their perception as a failure (73.3%) and not someone to be proud of (54.5%). The respondents agreed on the following: they have some good features (65.3%), they can do things well as most other people do (63.4%), and they take a positive attitude toward themselves (67.3), they are wholly satisfied with themselves (68.3%), and they wish they have more self-respect (73.3%).

In the deaf community, about 56.4% of them found that it is enjoyable to be a member of the deaf community. Nearly half of them believed that they have more in common with members of the other groups (48.5%), believed in the importance of relating to other deaf

persons (43.6%), and believed that they are a full-pledged deaf community member. About 37.6% of them believed in the similarity of the members of the deaf community. On the other hand, only one-fourth of them would rather associate themselves with the hearing community more as compared with the deaf community as indicated in Table 4.

**Table 1: Sociodemographic characteristics of the participants.**

| Demographics | N | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| **Age** | 83 | 18 | 60 | 24.92 | 7.0 |
| | | | | **Count** | **%** |
| **Total** | | | | 101 | 100.0 |
| **What is your city in Saudi Arabia?** | Abha | | | 3 | 3.0 |
| | Dammam | | | 2 | 2.0 |
| | Hail | | | 1 | 1.0 |
| | Jeddah | | | 22 | 21.8 |
| | Makkah | | | 48 | 47.5 |
| | Medina | | | 2 | 2.0 |
| | Qassim | | | 4 | 4.0 |
| | Riyadh | | | 17 | 16.8 |
| | Taif | | | 2 | 2.0 |
| **Gender** | Male | | | 89 | 88.1 |
| | Female | | | 12 | 11.9 |
| **Age (in years)** | Less than 20 | | | 19 | 22.9 |
| | 20-30 | | | 51 | 61.4 |
| | More than 30 | | | 13 | 15.7 |
| | Missing | | | 18 | |
| **Were you born with hearing loss?** | No | | | 8 | 7.9 |
| | Yes | | | 93 | 92.1 |
| **Were you born with hearing loss? = No** | **N** | **Min** | **Max** | **Mean** | **SD** |
| **If you were not born with hearing loss, at what age did you lose your sense of hearing?** | 5 | 7 | 15 | 9.80 | 3.1 |

**Table 2: Degree of hearing, education and communication among deaf participants.**

| Variables | | Count | % |
|---|---|---|---|
| **Total** | | 101 | 100.0 |
| **How would you characterize your degree of hearing without hearing aid?** | Profound hearing loss (cannot hear anything) | 61 | 60.4 |
| | Severe hearing loss (able to hear only really loud or high-pitched sounds) | 34 | 33.7 |
| | Moderate or mild hearing loss (able to hear much of a conversation) | 4 | 4.0 |
| | Normal hearing (can hear everything) | 2 | 2.0 |
| **How would you characterize your degree of hearing with hearing aid?** | Profound hearing loss (cannot hear anything) | 61 | 60.4 |
| | Severe hearing loss (able to hear only really loud or high-pitched sounds) | 34 | 33.7 |
| | Moderate or mild hearing loss (able to hear much of a conversation) | 4 | 4.0 |
| | Normal hearing (can hear everything) | 2 | 2.0 |
| **What kind of school did you attend?** | Mainstream school with a special class for the deaf | 38 | 37.6 |
| | Mainstream school with special services for the deaf | 11 | 10.9 |
| | Mainstream school with oral instruction | 45 | 44.6 |
| | Private school with special services for the deaf | 4 | 4.0 |
| | Other | 3 | 3.0 |
| **What is the mode of communication you use with your parents?** | Oral communication only | 7 | 6.9 |
| | Mostly oral communication with some sign | 41 | 40.6 |
| | Sign language is the primary mode of communication | 51 | 50.5 |
| | Other | 2 | 2.0 |

**Table 3. Perceived self-esteem of the participants.**

| Your thoughts and feelings about yourself | | Count | % |
|---|---|---|---|
| **Total** | | 101 | 100.0 |
| **I feel that I am a person of worth, at least on an equal basis with others.** | Strongly agree | 50 | 49.5 |
| | Agree | 51 | 50.5 |
| **I feel that I have a number of good qualities.** | Strongly agree | 34 | 33.7 |
| | Agree | 66 | 65.3 |
| | Disagree | 1 | 1.0 |
| **All in all, I am inclined to feel that I am a failure.** | Strongly agree | 4 | 4.0 |
| | Agree | 20 | 19.8 |
| | Disagree | 3 | 3.0 |
| | Strongly disagree | 74 | 73.3 |
| **I am able to do things as well as most other people.** | Strongly agree | 16 | 15.8 |
| | Agree | 64 | 63.4 |
| | Disagree | 7 | 6.9 |
| | Strongly disagree | 14 | 13.9 |
| **I feel I do not have much to be proud of.** | Strongly agree | 4 | 4.0 |
| | Agree | 38 | 37.6 |
| | Disagree | 4 | 4.0 |
| | Strongly disagree | 55 | 54.5 |
| **I take a positive attitude toward myself.** | Strongly agree | 24 | 23.8 |
| | Agree | 68 | 67.3 |
| | Disagree | 2 | 2.0 |
| | Strongly disagree | 7 | 6.9 |
| **On the whole, I am satisfied with myself.** | Strongly agree | 26 | 25.7 |
| | Agree | 69 | 68.3 |
| | Disagree | 2 | 2.0 |
| | Strongly disagree | 4 | 4.0 |
| **I wish I could have more respect for myself.** | Strongly agree | 25 | 24.8 |
| | Agree | 74 | 73.3 |
| | Disagree | 1 | 1.0 |
| | Strongly disagree | 1 | 1.0 |
| **I feel useless at times.** | Strongly agree | 8 | 7.9 |
| | Agree | 38 | 37.6 |
| | Disagree | 4 | 4.0 |
| | Strongly disagree | 51 | 50.5 |
| **At times I think I am no good at all.** | Strongly agree | 10 | 9.9 |
| | Agree | 32 | 31.7 |
| | Disagree | 8 | 7.9 |
| | Strongly disagree | 51 | 50.5 |

**Table 4. Sense of belongingness of participants in the both deaf and hearing community.**

| | | Count | % |
|---|---|---|---|
| **Total** | | 101 | 100.0 |
| **You and the deaf community** | | | |
| I find it pleasant to be a member of the Deaf community. | Completely true | 57 | 56.4 |
| | Somewhat true | 42 | 41.6 |
| | Somewhat untrue | 1 | 1.0 |
| | Untrue | 1 | 1.0 |
| I believe that, generally speaking, I have more in common with members of the other groups. | Completely true | 49 | 48.5 |
| | Somewhat true | 49 | 48.5 |
| | Somewhat untrue | 2 | 2.0 |
| | Untrue | 1 | 1.0 |

Continued.

| | | Count | % |
|---|---|---|---|
| I would rather belong to the hearing world than the Deaf community. | Completely true | 25 | 24.8 |
| | Somewhat true | 56 | 55.4 |
| | Somewhat untrue | 14 | 13.9 |
| | Untrue | 6 | 5.9 |
| Relationships with other deaf people are important to me. | Completely true | 44 | 43.6 |
| | Somewhat true | 54 | 53.5 |
| | Somewhat untrue | 3 | 3.0 |
| I believe that I am a full-fledged member of the deaf community. | Completely true | 42 | 41.6 |
| | Somewhat true | 56 | 55.4 |
| | Somewhat untrue | 3 | 3.0 |
| I believe that members of the deaf community are a lot like one another. | Completely true | 38 | 37.6 |
| | Somewhat true | 59 | 58.4 |
| | Somewhat untrue | 4 | 4.0 |
| **You and the hearing world** | | | |
| When I meet hearing people who cannot sign, I use paper and pen to communicate. | Often | 35 | 34.7 |
| | Sometimes | 47 | 46.5 |
| | Rarely | 17 | 16.8 |
| | Never | 2 | 2.0 |
| I go to events where the majority of people are hearing. | Often | 26 | 25.7 |
| | Sometimes | 57 | 56.4 |
| | Rarely | 17 | 16.8 |
| | Never | 1 | 1.0 |
| I try not to interact with hearing people. | Often | 18 | 17.8 |
| | Sometimes | 50 | 49.5 |
| | Rarely | 29 | 28.7 |
| | Never | 4 | 4.0 |
| When I meet hearing people who cannot sign, I leave without trying to communicate. | Often | 14 | 13.9 |
| | Sometimes | 50 | 49.5 |
| | Rarely | 32 | 31.7 |
| | Never | 5 | 5.0 |
| When I have to communicate with hearing people who cannot sign, I ask a hearing friend or relative to speak for me. | Often | 21 | 20.8 |
| | Sometimes | 57 | 56.4 |
| | Rarely | 22 | 21.8 |
| | Never | 1 | 1.0 |
| When I do not understand what hearing people say to me, I ask them to repeat themselves. | Often | 20 | 19.8 |
| | Sometimes | 49 | 48.5 |
| | Rarely | 25 | 24.8 |
| | Never | 7 | 6.9 |
| I initiate conversation with hearing people with whom I regularly meet at work or in class. | Often | 19 | 18.8 |
| | Sometimes | 52 | 51.5 |
| | Rarely | 28 | 27.7 |
| | Never | 2 | 2.0 |
| I tell the hearing person right at the beginning of the conversation that I am deaf. | Often | 21 | 20.8 |
| | Sometimes | 49 | 48.5 |
| | Rarely | 27 | 26.7 |
| | Never | 4 | 4.0 |
| I go to deaf events. | Often | 33 | 32.7 |
| | Sometimes | 50 | 49.5 |
| | Rarely | 17 | 16.8 |
| | Never | 1 | 1.0 |
| When I hang out with hearing people who cannot sign, I pretend that I understand everything that is going on. | Often | 28 | 27.7 |
| | Sometimes | 46 | 45.5 |
| | Rarely | 26 | 25.7 |
| | Never | 1 | 1.0 |

| | | Count | % |
|---|---|---|---|
| I go out of my way to hang out with deaf people. | Often | 36 | 35.6 |
| | Sometimes | 54 | 53.5 |
| | Rarely | 11 | 10.9 |
| **You and the deaf and hearing world** | | | |
| I can get along with hearing people just as well as with deaf people. | Often | 57 | 56.4 |
| | Sometimes | 28 | 27.7 |
| | Rarely | 14 | 13.9 |
| | Never | 2 | 2.0 |
| I am involved in the life of a deaf community. | Often | 44 | 43.6 |
| | Sometimes | 45 | 44.6 |
| | Rarely | 11 | 10.9 |
| | Never | 1 | 1.0 |
| When I am communicating with a hearing person, I do not tell them that I am deaf unless I have to. | Often | 43 | 42.6 |
| | Sometimes | 43 | 42.6 |
| | Rarely | 13 | 12.9 |
| | Never | 2 | 2.0 |
| I like building new relationships with hearing people. | Often | 41 | 40.6 |
| | Sometimes | 48 | 47.5 |
| | Rarely | 10 | 9.9 |
| | Never | 2 | 2.0 |
| I can get along well in both the hearing and the deaf world. | Often | 46 | 45.5 |
| | Sometimes | 46 | 45.5 |
| | Rarely | 9 | 8.9 |
| I do not have problems interacting with hearing people. | Often | 82 | 81.2 |
| | Sometimes | 19 | 18.8 |

In terms of their sense of belongingness with the hearing community, half of the total number of respondents sometimes use pen and paper in communicating to other people (46.5%), go to events wherein majority of hearing people attend to (56.4%), interact minimally with hearing people (49.5%), leave hearing people, who cannot do sign language, without trying to communicate (49.5%), ask for hearing friend to speak for them (56.4%), ask to repeat the message with communicating with hearing people (48.5%), initiate conversation with hearing people (51.5%), tell the hearing people that they are deaf when they begin conversing (48.5%), go to deaf events (49.5%), socialize with deaf persons (53.5%), and make-believe to understand what is going on with hearing people who do not know sign language (45.5%).

In terms of their belongingness in both deaf and hearing community, about 4 in every 5 participants have no problems interacting with hearing people. Likewise, more than half of the participants can get along well with hearing people. Less than half of them felt involved in the day-to-day activities of the deaf community (43.6%), like to build new relationships with hearing people (47.5%), can manage themselves well with both hearing and the deaf world (45.5%), and do not tell a hearing person that they are deaf unless needed (42.6%).

Statistical analysis, as shown in Table 5, revealed no significant difference between perceived self-esteem and age, gender, and having hearing loss at birth, regardless whether with oneself, or with deaf or hearing community. On the other hand, there is a significant difference in the level of hearing when using hearing aid when they interact with the deaf community when analyzed using Games Howell method, as indicated in Table 6. Also, there is significant difference in the manner of communication with their parents, as majority of them uses sign language as their principal means of communication as analyzed using LSD as a post hoc test.

**Table 5. Statistical correlation between demographics and self-esteem scores in various domains.**

| Demographics | | Total | With the deaf community | With oneself | With the hearing world |
|---|---|---|---|---|---|
| **Gender (n=101)** | Male | 89 | 13.09±2.0 | 20.19±3.7 | 20.38±3.3 |
| | Female | 12 | 13.33±1.9 | 19.92±5.2 | 22.00±3.1 |
| **P value** | | | 0.688 | 0.862 | 0.112 |
| **Age (n=83)** | Less than 20 years | 19 | 13.11±1.9 | 20.00±4.3 | 20.95±3.6 |
| | 20-30 years | 51 | 13.51±2.1 | 20.75±3.8 | 20.55±3.3 |
| | More than 30 years | 13 | 12.38±1.5 | 20.08±4.8 | 20.62±3.6 |

| Demographics | | Total | With the deaf community | With oneself | With the hearing world |
|---|---|---|---|---|---|
| **P value** | | | 0.188 | 0.743 | 0.909 |
| **Were you born with hearing loss? (n=101)** | No | 8 | 13.25±1.8 | 21.63±4.0 | 21.63±2.6 |
| | Yes | 93 | 13.11±2.0 | 20.03±3.9 | 20.48±3.4 |
| **P value** | | | 0.844 | 0.269 | 0.351 |
| **How would you characterize your degree of hearing without hearing aid? (n=101)** | Profound hearing loss | 61 | 12.92±1.8 | 19.61±3.8 | 20.84±3.3 |
| | Severe hearing loss | 34 | 13.53±2.3 | 20.91±4.1 | 20.09±3.0 |
| | Moderate or mild hearing loss | 4 | 12.25±1.0 | 20.50±1.9 | 20.50±5.8 |
| | Normal hearing | 2 | 14.00±2.8 | 23.50±2.1 | 21.00±2.8 |
| **P value** | | | 0.347 | 0.263 | 0.770 |
| **How would you characterize your degree of hearing with hearing aid? (n=101)** | Profound hearing loss | 61 | 12.67±1.6 | 19.36±3.7 | 20.87±3.5 |
| | Severe hearing loss | 34 | 13.91±2.3 | 21.35±4.2 | 19.91±2.9 |
| | Moderate or mild hearing loss | 4 | 12.75±0.5 | 20.50±1.9 | 21.50±4.2 |
| | Normal hearing | 2 | 14.00±2.8 | 23.50±2.1 | 21.00±2.8 |
| **P value** | | | 0.023[a] | 0.061 | 0.539 |
| **What kind of school did you attend? (n=101)** | Mainstream school with a special class for the deaf | 38 | 13.45±1.9 | 20.74±4.3 | 21.37±3.3 |
| | Mainstream school with special services for the deaf | 11 | 13.18±2.1 | 19.82±3.1 | 19.45±4.6 |
| | Mainstream school with oral instruction | 45 | 12.60±1.9 | 19.31±3.6 | 20.04±2.7 |
| | Private school with special services for the deaf | 4 | 15.25±0.5 | 22.75±4.6 | 22.75±4.3 |
| | Other | 3 | 13.67±2.1 | 23.33±1.5 | 19.67±3.1 |
| **P value** | | | 0.052 | 0.143 | 0.159 |
| **What is the mode of communication you use with your parents?** | Oral communication only | 7 | 12.43±1.8 | 18.43±4.8 | 22.29±3.5 |
| | Mostly oral communication with some sign | 41 | 12.71±1.6 | 18.80±3.2 | 20.78±3.3 |
| | Sign language is the primary mode of communication | 51 | 13.51±2.1 | 21.35±3.9 | 20.16±3.3 |
| | Other | 2 | 14.00±2.8 | 23.50±2.1 | 21.00±2.8 |
| **P value** | | | 0.162 | 0.004[a] | 0.415 |

[a]-significant using One-Way ANOVA @<0.05 level.

**Table 6: Multiple comparisons for degree of hearing with hearing aid and mode of communication with parents.**

| I | J | | Mean Difference (I-J) | 95% confidence interval | | P value |
|---|---|---|---|---|---|---|
| | | | | Lower bound | Upper bound | |
| **Dependent variable = how would you characterize your degree of hearing with hearing aid?** | | | | | | |
| With the deaf community (Games-Howell) | Profound hearing loss | Severe hearing loss | -1.240* | -2.43 | -.05 | 0.039 |
| | | Moderate or mild hearing loss | -.078 | -1.11 | .95 | 0.995 |
| | | Normal hearing | -1.328 | -45.49 | 42.83 | 0.902 |
| | Severe hearing loss | Profound hearing loss | 1.240* | .05 | 2.43 | 0.039 |
| | | Moderate or mild hearing loss | 1.162 | -.13 | 2.46 | 0.090 |
| | | Normal hearing | -.088 | -39.29 | 39.11 | 1.000 |
| | Moderate or mild hearing loss | Profound hearing loss | .078 | -.95 | 1.11 | 0.995 |
| | | Severe hearing loss | -1.162 | -2.46 | .13 | 0.090 |
| | | Normal hearing | -1.250 | -44.54 | 42.04 | 0.915 |
| | Normal hearing | Profound hearing loss | 1.328 | -42.83 | 45.49 | 0.902 |
| | | Severe hearing loss | .088 | -39.11 | 39.29 | 1.000 |
| | | Moderate or mild hearing loss | 1.250 | -42.04 | 44.54 | 0.915 |

Continued.

| I | | J | Mean Difference (I-J) | 95% Confidence Interval | | P value |
|---|---|---|---|---|---|---|
| | | | | Lower bound | Upper bound | |
| **Dependent variable = what is the mode of communication you use with your parents?** | | | | | | |
| With oneself (LSD) | Oral communication only | Mostly oral communication with some sign | -.376 | -3.37 | 2.62 | 0.804 |
| | | Sign language is the primary mode of communication | -2.924 | -5.88 | .03 | 0.052 |
| | | Other | -5.071 | -10.95 | .80 | 0.090 |
| | Mostly oral communication with some sign | Oral communication only | .376 | -2.62 | 3.37 | 0.804 |
| | | Sign language is the primary mode of communication | -2.548* | -4.09 | -1.01 | 0.001 |
| | | Other | -4.695 | -10.00 | .61 | 0.082 |
| | Sign language is the primary mode of communication | Oral communication only | 2.924 | -.03 | 5.88 | 0.052 |
| | | Mostly oral communication with some sign | 2.548* | 1.01 | 4.09 | 0.001 |
| | | Other | -2.147 | -7.43 | 3.14 | 0.422 |
| | Other | Oral communication only | 5.071 | -.80 | 10.95 | 0.090 |
| | | Mostly oral communication with some sign | 4.695 | -.61 | 10.00 | 0.082 |
| | | Sign language is the primary mode of communication | 2.147 | -3.14 | 7.43 | 0.422 |

*. The mean difference is significant at the 0.05 level.

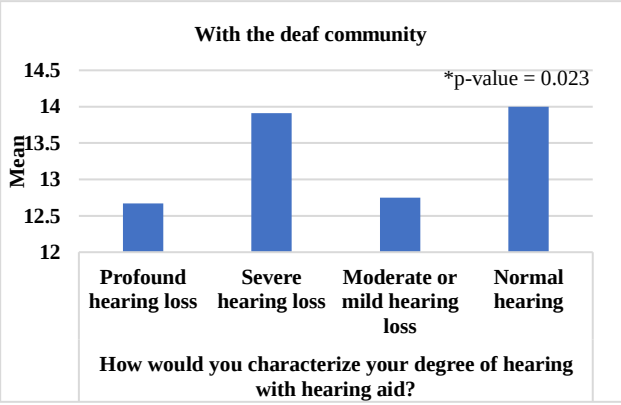


**Figure 1: Characterize your degree of hearing with hearing aid?**

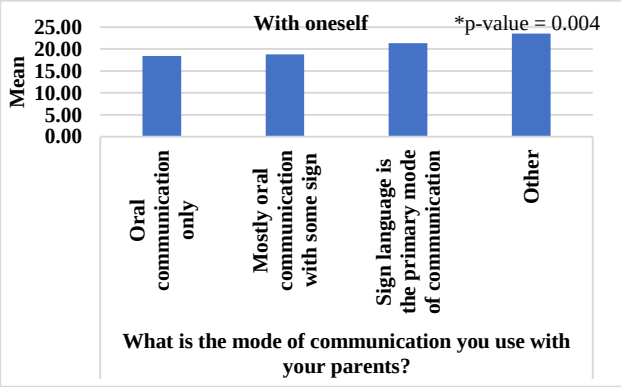


**Figure 2: Mode of communication you use with parents.**

## DISCUSSION

In this study, about half of the respondents felt proud to belong in the deaf community. People with hearing loss have higher tendency to have lower self-esteem due to variances from hearing peers in terms of communication skills, physical attributes, and social development.[12] In a study conducted by Warner-Czyz and others, an online questionnaire was prepared and answered by 50 children in order to assess their communication and social skills, perceived self-esteem, and personality. Higher self-esteem was recorded for those who are given enough attention and with good affiliation temperaments. However, depressive mood provides a negative role in the establishment of the children's perceived self-esteem.[13]

Al-shammari and others also studied and determine the social-emotive perceptions of deaf students in Hail, Saudi Arabia. High level of happiness and satisfaction within themselves were recorded in students interviewed. However, they get embarrassed and perceive barriers when communicating with people that did not understand them.[14]

Dilemmas on emotion-related mental health were depressingly linked with positive self-esteem and positively related with peer rejection. Issues in relation to behavior-motivated mental health problems were certainly associated with low societal acceptance and peer rejection but not with the social engagement with hearing people. Peer rejection linked the association between societal acceptance and behavioral dilemma.[15] Depressive symptoms among deaf people are not different to those

hearing people also experience. However, communication becomes a taller barrier and it often creates more difficulty for deaf patients to reach out their depressive problems with other people.[16, 17]

An ear injury generates a means to compensate a problem, which in turn brings forth the development of other senses' function, mainly sensation and sight.[18] Several research articles have suggested that feeling the vibrations and participating in music and dance can be a foundation of positive changes among D/HH people. This is important because most cannot show what they feel through words or acknowledge them in other people's speech. Participating in this endeavor can definitely affect their perceived self-esteem in a positive light.[19,20]

Statistical analysis revealed no significant difference between perceived self-esteem and age, gender, and having hearing loss at birth, regardless whether with oneself, or with deaf or hearing community. On the other hand, a one study assessed the commonness of depression symptoms among Palestinian deaf adults using the patient health questionnaire (PHQ-9) scale. Results showed that 59% of the study population had minimal to severe depression symptoms. This study emphasized that deaf individuals who are unmarried, have low family income, live in separate homes, jobless, and have a family history of mental disorder higher odds of suffering depression.[21] Alofi et al also found that language deprivation, poor quality education, and a poor work environment are the dilemma being faced by deaf Saudi people in their day-to-day activities.[22]

Significant difference was present in the degree of hearing with hearing aid when they interact with the deaf community as analyzed using Games Howell method. Satisfactory self-esteem is highly valuable for effective social functioning.[23-25] In 252 respondents interviewed in a retrospective, multicenter study, children with hearing impairment have lower perceived self-esteem, especially those who attended special education, even after meeting the needs for their intelligence and language development. However, younger age of hearing aid implantation and existence of cochlear implants at longer period of time expressed higher levels of their perceived self-esteem.[26]

A comparative study on perceived self-esteem was conducted between D/HH individuals who are actively or inactively participating in sport-related activities using the Rosenberg self-esteem scale (RSES). Higher RSES scores indicate a more positive feelings about the self. The study revealed higher RSES for those D/HH individuals who are actively participate in sport activities. However, low self-esteem in all evaluated groups, whether active or inactive, was declared as they wish they could have more respect for themselves.[27]

Another study examined the relation between various facets of self-esteem and sport competition level and assess the connection between self-esteem and duration of participation in sport, age, and dramatic sport experiences in deaf athletes. Results indicated that dramatic sport experiences significantly projected life satisfaction, self-achievement, self-disclosure, self-acceptance, negative relationships with others. Thus, dramatic sport experiences can improve several facets of a person's perceived self-esteem.[28]

Also, there is significant difference in the communication means with their parents, as majority of them uses sign language as their principal means of communication as analyzed using LSD as a post hoc test. In Iran, deaf high school children's perceived self-esteem and their relationship with their mothers were examined using RSES and parental attitudes towards deafness and interviews scale. Results presented that higher self-esteem scores are common to those who can communicate ably with their mothers.[29] This highlights the promotion of positive family relationships and acceptance of disabilities in deaf children to improve positive self-esteem.[29,30]

Rogers et al have suggested the use of a deaf role model in improving self-esteem of other deaf people. In their study, focus group discussion were conducted with D/HH adults who were particularly qualified as role models for deaf people.[31] They concluded that knowing and appreciating the works of D/HH adults with younger deaf people will be advantageous not only for their families and specialists who work with them, but also for themselves. The study conducted by Almotiri et al also revealed that D/HH professionals are valuable role models for the deaf community.[32]

## CONCLUSION

Hearing is an important sense that individuals depend on in their day-to-day activities. However, labeling and stigmatization can disturb a deaf individual's perceived self-esteem, particularly in a predominantly hearing environment. As such, this study explored the deaf Saudi person's perceived self-esteem. There is a significant difference in the degree of hearing with hearing aid when they interact with the deaf community and in the mode of communication with their parents. On the other hand, lower self-esteem in deaf people could lead to depressive mood. However, barriers with communication creates difficulty for deaf patients to discuss depressive dilemma with other people. The use of hearing aid plays a great role in improving the communication skills of deaf people. Other senses, such as sight and sensation, could be used in order to encourage positive emotional, behavioral, and societal changes in deaf people. Likewise, D/HH role models can be utilized in deaf communities to improve self-esteem.

### *Recommendations*

This study recommends highlighting the impact of D/HH role models as well as hearing aids in deaf communities

around Saudi Arabia and explore its effect in minimizing depression and eradicating stigma on deaf people. Likewise, it recommends future researchers to study the impact of sight, sensation, as well as use of hearing aid in improving the self-efficacy of Saudi deaf people. In addition, future studies should be conducted with larger and more diverse deaf populations.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the General Directorate of Education in Jeddah*

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**Cite this article as:** Alharbi R. Assessment on the perceived self-esteem of Saudi adults with deafness and hard of hearing. Int J Community Med Public Health 2020;7:1276-86.