Hearing, Deaf, and Hard-of-Hearing Israeli Adolescents’ Evaluations of Deaf Men and Deaf Women’s Occupational Competence

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This study examined 74 deaf and hard-of-hearing (D/HH) and 91 hearing high school students regarding their own occupational aspirations and their evaluations of occupational competence (EOCs) for deaf adults. In the EOC, participants rated the suitability of 25 occupations (varying according to prestige and required level of communication) for deaf men and women. The results showed that occupations requiring intensive communication levels, regardless of their prestige, were evaluated as much less suitable for deaf individuals than were those requiring less communication. D/HH adolescents did not find highly prestigious occupations as suitable for deaf adults even when communication barriers were irrelevant. Both D/HH and hearing participants expressed biased evaluations of deaf women’s competence, but no further evidence emerged for stereotypic attitudes. Higher educational aspirations among hearing adolescents, especially hearing males, correlated with a higher EOC of deaf adults. No such associations emerged for D/HH participants. No gender effects emerged. Implications of these outcomes for career development, especially for females, were discussed.

Physical disability affects development directly and indirectly. The nature and severity of the condition affect development directly by imposing limitations on the child’s functioning. Indirectly, the disabling condition evokes emotional and social responses in the child and in significant others in the child’s social environment (Wright, 1983). Others’ perceptions of the disability influence their behavior toward the child, who perceives these behaviors. Hence, the child’s development is affected both by the child’s own perceptions and by others’. These reciprocal perceptions lay the ground for the socioemotional development of the child with a disabling condition, particularly regarding self-image and attitudes toward oneself and toward others with a similar disability. Self-image and attitudes manifest themselves in self-efficacy regarding various aspects of life, including educational aspirations and occupational expectations as children reach adolescence. The level of education that youngsters aspire to achieve, the occupations they expect to hold, and the extent to which they believe they will be capable of succeeding in certain jobs, all appear to be powerful determinants of career choice and development (Read, 1994).

To establish occupational expectations, adolescents with a disability need to evaluate their own occupational competence vis-à-vis different possible vocations. In line with the reciprocal perceptions outlined above, these youngsters may also be influenced by the attitudes of others in their environment toward the occupational competence of individuals with their specific disability (DeCaro, Mudgett-DeCaro, & Dowaliby, 2001; Lewkowicz & Liben, 1998; Weisel, 1998). This study examined how deaf and hard-of-hearing (D/HH) and hearing adolescents evaluated the occupational competence of deaf adults, with a focus on the effect of gender on these evaluations.
Gender and Attitudes Toward Persons With Disabilities

Research has shown that gender significantly influences attitudes toward persons with disabling conditions, occupational expectations, and evaluations of people’s ability to perform satisfactorily in a particular occupation (Couch & Sigler, 2001; Mennino & Brayfield, 2002; Tilleczek & Lewko, 2001). Studies revealed that girls were generally more accepting of individuals with disabilities than were boys and that these differential attitudes were especially pronounced when the target was the same gender as the participant (Colwell, 1998; Nabors & Keyes, 1995; Nabuzoka & Ronning, 1997; Nowicki & Sandieoson, 2002). Weisel and Florian (1990) found that male adolescents expressed less positive attitudes toward females with disability than toward males with disability. No such difference emerged for female adolescents. Nelson-Le-Gall, Kratzer, Jones, and DeCooke (1990) matched the gender of the participant with the target child, and their results indicated similar attitudes for girls and boys. However, when male and female participants were presented with only a male target (e.g., Bickett & Milich, 1990; Woodard, 1995), girls were more biased against the male target than were the boys. Apparently, although girls generally express more positive attitudes, they may be more biased toward targets with disabilities when the target is male. Although sometimes inconsistent, these findings prompted Nowicki and Sandieoson (2002) to call on researchers to maintain more awareness of gender as a potential confounding factor. Examination of gender differences in deaf persons’ occupational expectations and evaluations of occupational competence (EOCs) is especially important because of the difficult employment demographics for deaf women (MacLeod-Gallinger, 1992; Sela & Weisel, 1992), as described below.

This article had three main goals: to compare D/HH and hearing adolescents’ EOCs of deaf adults, to examine the effects of evaluator and evaluatee gender on EOCs, and to study the relationships between D/HH and hearing adolescents’ own educational aspirations and their EOCs of deaf adults.

Evaluation of Deaf Persons’ Occupational Competence

Researchers have measured EOC by presenting participants with a list of occupations and asking them to indicate whether each occupation is suitable for a deaf person and for a hearing person (e.g., Parasnis, Samar & Mandke, 1996) or whether they would recommend that the target person (deaf or hearing) work in each of the listed occupations (e.g., Hurwitz, Weisel, Parasnis, DeCaro, & Savir, 1997). The participants in most of these studies were hearing persons such as parents and teachers of deaf students. Several studies in different countries followed these procedures, analyzing the number and type of occupations considered suitable/recommended (e.g., DeCaro, Evans, & Dowlabiy, 1982; DeCaro et al., 2001; Hurwitz et al., 1997; Maruggi, 1983; Naidoo, 1985, 1989; Parasnis, DeCaro, & Raman, 1996; Parasnis, Samar, et al., 1996; Weisel, 1998). DeCaro et al. (2001) noted that these studies generally revealed lower EOCs for deaf persons than for hearing persons, despite the different cultures in the different countries studied. DeCaro et al. (2001) suggested that deafness may act as a cultural homogenizer with regard to attitudes toward careers. In other words, the effect of deafness on attitudes was similar in different cultures. Parasnis, Samar, et al. (1996), however, did not find a significant effect of hearing status on their Indian participants’ EOCs.

The few studies that included deaf participants themselves showed similar results. Hurwitz et al.’s (1997) deaf Israeli participants tended to express lower evaluations of deaf targets’ competence compared with hearing targets. Schroedel’s (1992) review of the literature on deaf individuals’ occupational expectations concluded that deaf persons had relatively low expectations; they more often indicated that blue-collar jobs were more suitable than did hearing persons.

However, none of these studies investigated EOCs for women and men separately. The need to examine gender effects on EOCs is threefold: First, men and women generally differ in their educational aspirations and occupational expectations. Second, deaf women evidence a troubling employment situation, as mentioned above. Third, deaf persons tend to
hold stereotypic sex-role attitudes and perceptions. These three issues will be addressed in the following paragraphs.

Gender Roles, Self-Esteem, and Occupational Expectations

Gender-role stereotyping has a limiting effect on self-esteem and on the selection of occupations by children and adolescents. Apparently, gender-role expectations and their links with occupational expectations and self-esteem begin early and continue throughout development. In Ashton and Kimberly’s (1995) investigation of 68 preschoolers’ sex-typed occupational aspirations, both boys and girls preferred traditionally gender-appropriate occupations. These 4-year-old boys particularly rejected occupations associated with the other gender. Elementary school students reported definite stereotypes about male-appropriate and female-appropriate careers, and these gender stereotypes influenced their own career aspirations (Herring, 1998; Thiessen & Blasius, 2002). Regarding junior high school students, Robison-Awana, Kehle, and Jenson (1986) asked seventh graders to take a self-esteem inventory, both as themselves and as someone of the opposite sex. They found that both boys and girls believed that girls had lower self-esteem. Indeed, adolescent school students reported definite stereotypes about male-appropriate and female-appropriate careers, and these gender stereotypes influenced their own career aspirations (Herring, 1998; Thiessen & Blasius, 2002). Regarding junior high school students, Robison-Awana, Kehle, and Jenson (1986) asked seventh graders to take a self-esteem inventory, both as themselves and as someone of the opposite sex. They found that both boys and girls believed that girls had lower self-esteem. In-as-much as higher self-esteem usually correlates with more positive attitudes toward persons with disabilities (Livneh, 1982) and females often exhibit lower self-esteem than males, females may be expected to express more negative attitudes and lower EOCs than males regarding individuals with disabilities. However, females usually express more positive attitudes and EOCs toward persons with a disability than do males (Livneh, 1982). Possibly, self-esteem, as well as educational aspirations, may correlate positively with attitudes within each gender group. To shed light on this issue, this study examined male and female adolescents’ educational aspirations (as an aspect of self-esteem) and their associations with EOCs concerning deaf men and women.

Employment of Deaf Women and Men

MacLeod-Gallinger (1992) compared the employment characteristics of 4,917 deaf high school graduates to national data in the United States. A higher rate of unemployment emerged for deaf women than for deaf men, especially in data that included adults without a college education. In addition, deaf employees frequently worked in lower paying occupations than those of hearing employees. Furthermore, differences in salary emerged between deaf and hearing workers, even in professional jobs. Deaf women in particular held positions at the lower end of the pay range, mainly due to the high rate of deaf women in administrative support (clerical) positions that were generally low-paying jobs. An interesting finding was that no difference emerged between deaf women and deaf men when overall socioeconomic status was examined. This perhaps stemmed from the relatively high socioeconomic status of teachers and counselors, occupations held by many deaf women, particularly serving
the deaf population. It should be noted that MacLeod-Gallinger (1992) studied only high school graduates; therefore, her results did not represent the total deaf population.

In a demographic study of the Israeli deaf population’s employment characteristics, Sela and Weisel (1992) found a higher rate of employment among men (76.7%) than among women (45.9%) and higher occupational prestige for men than for women. On a scale from 1 to 100, 29.2% of the deaf women held jobs with an occupational prestige ranking above 40, compared with 42.3% of the men. Female deaf Israelis' employment characteristics correlated with their ethnic origin, whereas that of males did not. More women of western origin (i.e., Europe and North America) were employed, had higher occupational prestige, and were promoted than were women of eastern origin (i.e., Asia and Africa). These findings suggested the influences of cultural and societal attitudes on employment, especially of women. Arguably, these findings appear to contrast with DeCaro et al.'s (2001) conclusion that deafness acts as a cultural homogenizer with regard to attitudes toward careers in different countries. It seems that even if perceptions of deaf persons' occupational options are similar across different cultures, deaf women remain at higher risk.

Deaf Persons’ Attitudes and Perceptions of Gender Roles

Very few studies on deaf individuals have considered the effect of participants’ as well as targets’ gender. Lewkowicz and Liben’s (1998) review of the literature on gender stereotyping noted that deaf individuals tended to have stereotypic perceptions of men and women more than hearing individuals did. In addition, deaf junior high school students were more likely than hearing peers to enroll in traditional sex-appropriate educational programs (Egelston-Dodd, 1977, in Lewkowicz & Liben, 1998). In their research, Lewkowicz and Liben asked deaf and hearing children (mean age 7.2 and 8.5 years, respectively) to indicate who should be engaged in each of 15 occupations that included stereotypically masculine, stereotypically feminine, and neutral occupations. Their results showed that deaf children expressed more stereotypic attitudes than did hearing children and that deaf girls held less stereotypic attitudes than deaf boys. Stauffer and Long (1990) found that deaf high school students held a more stereotypic and conservative approach toward men’s and women’s occupations than did hearing peers. Stauffer and Long’s replication of previous studies conducted about a decade earlier reported that deaf males, unlike deaf females and hearing males and females, demonstrated less gender stereotyping than shown in earlier research. Based on the available body of findings, it was expected in this article that participants’ hearing status and gender would both affect participants’ EOCs concerning deaf men and women.

Method

Participants

Participants comprised 165 high school students, including 74 D/HH participants (41.89% of whom were males) and 91 hearing participants (38.46% males). The mean age was 17.27 years ($SD = 1.30$) for the D/HH group and 15.75 years ($SD = .71$) for the hearing group. Although the D/HH participants were older, $t (163) = 9.59, p < .000$, no significant correlations emerged between age and any of the dependent variables for either research group.

All of the participants attended two comprehensive high schools in Israel that included special programs for deaf and hard-of-hearing students. These programs included both special classes for D/HH students and individual integration into general classes. All the D/HH students who attended the school at the date when the questionnaires were administered participated in the study.

D/HH participants’ self-reports indicated that 23 (31.1%) had profound or severe hearing loss and 51 (68.9%) had moderate or mild loss. The vast majority (94.0%) of the D/HH students had hearing aids, and 77.0% used them regularly.

The time each D/HH student studied with either hearing students or with other D/HH students was determined on an individual basis. In this study each D/HH participant was asked to indicate whether she/he (a) studied only with hearing students, (b) mainly with hearing students, (c) only with other D/HH
students, or (d) mainly with other D/HH students. Only 12.2% of the D/HH participants reported that they spent all or most of their time with hearing students. Surprisingly 87.8% of the D/HH participants, many of them with mild or moderate hearing losses, reported that they spent all or almost all of their time with other D/HH students. This might be due to the fact that rarely only one individual D/HH student was present in a regular class. Quite often a group of several D/HH students was integrated into a regular class, and thus individual D/HH students did not consider the regular class as a “pure” hearing environment.

It should be noted that all the D/HH students, including those who reported that they spent all or most of their time with hearing students, were associated socially with other D/HH students on a regular basis.

A detailed analysis of the Israeli situation with regard to D/HH people, as reflected by the social and educational policy that is implemented, is beyond the scope of this article. However, few descriptions of the Israeli educational system and of two programs that were included in this study are worth noting: Historically, the education of D/HH students in Israel was based more on the oral approach than on the emphasis of Deaf identity and Deaf culture. There is a strong emphasis on integration into the general hearing society. This is, perhaps, one reason for the lack of residential schools in the country. The two programs, as well as other programs in the country, are called “the hearing impaired program” or “the hearing impairment program” without reference to deafness. The sign language that is used in the educational system is almost always Signed Hebrew and not Israeli Sign Language. Sign language educational interpretation was introduced into the educational programs only about 15 years ago. Although the two programs strongly emphasize the development of spoken language (i.e., Hebrew) and academic achievements via educational integration, they also foster the formation of social groups of D/HH students and encourage the development of bicultural identity. Most of the D/HH students in the programs, regardless of their degree of hearing losses, hold a bicultural identity, that is, both Deaf and Hearing orientations (Blitzer, 2005). Because of their bicultural orientations it seemed relevant, in this study, to evaluate their expectations from deaf people in spite of the fact that many of them were not audiologically deaf.

Four classes of hearing students, two in each school, were randomly selected to participate in the study. Individual D/HH students attended these classes part-time, and sign language interpreters were often present. Therefore, all of the hearing students had contact with or exposure to the D/HH students and to the use of sign language.

Instruments

Background information. A short questionnaire collected demographic data such as age, sex, and mother’s and father’s level of education and profession. In addition, the D/HH students reported age at onset of deafness, use of hearing aid, and portion of time spent in the general classroom versus the D/HH classroom. In order to evaluate the severity of the hearing losses the D/HH participants also responded to the Hebrew version of the Gallaudet Hearing Scale (Weisel & Kamara, 2005; Sela & Weisel, 1992) that was originally developed by Schein and Delk (1974).

Educational aspirations. To tap adolescents’ own aspirations for their educational advancement, we developed an instrument for this study based on Cinamon’s (2001) measure of occupational aspiration. Cinamon’s scale comprised four items representing beliefs in future success at work (e.g., “I assume that I will be successful in my future job”) with a Cronbach α of .75. The current adaptation included eight items representing a continuum of eight educational levels or degrees to which the participant aspired. The eight levels were: 1 = I think I’ll stop studying soon; 2 = I think I’ll keep studying for a short while; 3 = I think I’ll finish high school; 4 = I think I’ll finish high school and get a vocational diploma; 5 = I think I’ll finish high school and get a high school diploma (pass matriculation examinations); 6 = I think I’ll get post-secondary vocational education; 7 = I think I’ll study in a college or a university; 8 = I think I’ll get an academic (university) degree. Each question had two possible responses: agree or disagree. The highest level of education endorsed by a participant comprised the educational aspiration score.
Evaluations of occupational competence. The EOC scale used in this study consisted of a modified version of Sela and Weisel’s (1992) 17-item tool, which asked participants to indicate whether each of the 17 listed occupations would be suitable for a deaf person. To improve reliability, several of the original occupations were removed (including gender-stereotyped occupations such as truck driver or kindergarten teacher) and others were added, thus forming a total list of 24 occupations (see Table 1). Two judges evaluated each of the 24 occupations to assess (a) their communication requirements (high vs. low) and (b) their level of prestige using Kraus and Hartman’s (1994) ranking of occupational prestige (high vs. low). Two judges classified the occupations into the four groups and reached a 100% level of interjudge agreement after they resolved some disagreements through discussion. Four EOC subscales were thus formed: seven occupations that required intensive communication and held high prestige (HC-HP); six occupations that required intensive communication and held low prestige (HC-LP); five occupations that held low-communication requirements and high prestige (LC-HP); and six occupations that held low-communication requirements and low prestige (LC-LP). Table 1 presents the 24 occupations divided into the four subscales and their alpha coefficients. Participants completed the instrument twice, once with deaf male adults as the target and once with deaf female adults as the target. For each target, four percentage scores were calculated, one for each subscale. Subscale scores were computed by tallying the number of occupations in that subscale that the participant indicated as suitable for the target group (deaf females/deaf males) and then dividing this number by the total number of occupations in that subscale. Thus, scores ranged from 0 to 1, with higher scores indicating higher EOCs.

Procedure

Permissions to conduct the study were granted by the schools’ principals and by the supervisors of the D/HH programs. The questionnaires were administered to the participants in their classrooms by a research assistant who was a certified teacher of D/HH students. The research assistant explained how to respond to the questionnaires, informed the participants about the general nature of the study, and emphasized the confidence of the responses. The administration of the questionnaires took about 15 and 25 min to the hearing and to the D/HH participants, respectively. Those D/HH participants who were attending general classes responded to the questionnaires individually or in small groups either in their general classes or in a quiet room in the school. No difficulties in responding to the questionnaires were evident.

Table 1  The four occupational subscales

<table>
<thead>
<tr>
<th>HC-HP</th>
<th>HC-LP</th>
<th>LC-HP</th>
<th>LC-LP</th>
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<tbody>
<tr>
<td>Physician</td>
<td>Receptionist</td>
<td>Engineer</td>
<td>Cook</td>
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<tr>
<td>Senior secretary</td>
<td>Counselor</td>
<td>Playwright</td>
<td>Salesperson</td>
</tr>
<tr>
<td>School principal</td>
<td>Stage manager</td>
<td>Archeologist</td>
<td>Animal caretaker</td>
</tr>
<tr>
<td>Lawyer</td>
<td>Police officer</td>
<td>Veterinarian</td>
<td>Ticket seller</td>
</tr>
<tr>
<td>Department head</td>
<td>Nurse</td>
<td>Senior accountant</td>
<td>Production worker</td>
</tr>
<tr>
<td>Owner/manager of a big business</td>
<td></td>
<td></td>
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<tr>
<td>Senior bank consultant</td>
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<table>
<thead>
<tr>
<th>HC-HP</th>
<th>HC-LP</th>
<th>LC-HP</th>
<th>LC-LP</th>
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<tr>
<td>.79</td>
<td>.49</td>
<td>.55</td>
<td>.63</td>
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<tr>
<td>.71</td>
<td>.54</td>
<td>.62</td>
<td>.56</td>
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</table>

Note. D/HH = deaf and hard of hearing; HC-HP = high-communication and high-prestige occupations; HC-LP = high-communication and low-prestige occupations; LC-HP = low-communication and high-prestige occupations; LC-LP = low-communication and low-prestige occupations; a = alpha for male targets, b = alpha for female targets.
Results

Degree of Hearing Level

In order to test for possible effect of hearing level on the dependent variables of this study, Pearson correlation coefficients were calculated between the participants’ scores on the Gallaudet Hearing Scale and each of the eight dependent variables (i.e., EOC for male and for female targets). None of these coefficients were found to be statistically significant. In addition, two multivariate analyses of variance (MANOVAs) were conducted with hearing level (severe–profound vs. mild–moderate) as the independent variable. In the first MANOVA the dependent variables were the four scores for EOC for male targets, and in the second MANOVA the four scores for EOC for female targets were the dependent variables. None of these analyses yielded significant results ($F(4, 69) = .62, p = .65$, and $F(4, 69) = .80, p = .63$ for the male and female targets, respectively), and therefore all the D/HH participants were treated as one group in the following analyses.

Educational Aspirations

Table 2 presents the data used for two-way analyses of variance conducted with participants’ educational aspirations as the dependent variable and with participants’ gender and hearing status (D/HH vs. hearing) as the two independent variables. A significant but small effect of hearing status emerged, $F(1, 161) = 4.17, p < .05$, partial eta squared ($\eta^2_p = .025$). Hearing participants expressed a higher level of educational aspirations than did D/HH participants. No gender effect or interaction effect emerged.

Table 2  Means and standard deviations for educational aspirations, by hearing status and gender

<table>
<thead>
<tr>
<th></th>
<th>Deaf and hard of hearing</th>
<th>Hearing</th>
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<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>($n = 31$)</td>
<td>($n = 43$)</td>
<td>($n = 74$)</td>
</tr>
<tr>
<td>$M$</td>
<td>6.55</td>
<td>6.51</td>
</tr>
<tr>
<td>$SD$</td>
<td>1.57</td>
<td>1.64</td>
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</tbody>
</table>

Evaluations of Occupational Competence

Table 3 presents group means and standard deviations for scores on each of the four EOC subscales (HC-HP, HC-LP, LC-HP, and LC-LP) for male targets and for female targets among the two research groups (D/HH and hearing) for each gender. A repeated-measure MANOVA was conducted with participant’s hearing status and gender and target’s gender (i.e., the repeated measure) as the independent variables and with the four EOC subscales as the dependent variables. The MANOVA yielded a significant main effect of the hearing status group, $F(4, 158) = 10.45, p < .001$, partial $\eta^2 = .209$, and a significant effect of the repeated factor (target gender), $F(4, 158) = 3.10, p = .017$, partial $\eta^2 = .073$. None of the effects of participants’ gender and none of the interaction effects were significant.

Tables 4 and 5 present the results of subsequent univariate analyses conducted for between-subjects and within-subjects analyses. As seen in Table 4, the between-subjects effect (D/HH vs. H) was significant with regard to HC-LP occupations, $F(1, 161) = 22.79, p = .000$, partial $\eta^2 = .124$, and with regard to LC-HP occupations, $F(1, 161) = 5.72, p = .018$, partial $\eta^2 = .034$. Regarding HC-LP occupations, D/HH participants had higher EOCs than hearing participants for both male deaf targets (D/HH: .68; H: .78) and female targets (D/HH: .50; H: .31). Regarding LC-HP occupations, D/HH participants had lower EOCs than hearing participants for both male deaf targets (D/HH: .49; H: .34) and female deaf targets (D/HH: .71; H: .72) and female targets (D/HH: .68; H: .78).

As seen in Table 5, the within-subjects effect (the repeated measure of target gender) was significant with regard to LC-HP occupations, $F(1, 161) = 9.19, p = .003$, partial $\eta^2 = .054$. Scores on the LC-HP subscale were .77 and .74 for male and female targets, respectively. Scores on the LC-LP subscale were .83 and .80 for male and female targets, respectively. Thus, higher expectations emerged for deaf men than for deaf women regarding both LC-HP and LC-LP occupations. However, the small size of these two subscales’ statistically
significant differences, as shown by the small sizes of the partial η² values, is to be noted.

Relations Between Educational Aspirations and EOCs

Table 6 presents the Pearson correlation coefficients calculated separately for each of the four research groups between participants' level of educational aspirations and their four EOC subscale scores for each of the two targets. The results showed that D/HH males' educational aspirations did not significantly correlate with any of their EOCs for either deaf males or females. D/HH females' aspirations revealed two moderately significant correlations (p < .05): with HC-HP occupations for deaf male targets (r = .34) and with LC-LP occupations for deaf female targets (r = .37).

Normally hearing male participants' level of aspirations correlated significantly with almost all of the EOCs for both male and female deaf targets, except for LC-LP occupations for deaf male targets and HC-LP occupations for deaf female targets. With regard to

Table 3 Standard deviations of the EOC by participant’s hearing status group and gender for male and female targets

| EOC subscale | Deaf and hard of hearing | | | Hearing | | | | |
|--------------|--------------------------|-------|-------|--------------------------|-------|-------|-------|
|              | Male (n = 31) | Female (n = 43) | Total (n = 74) | Male (n = 35) | Female (n = 56) | Total (n = 91) |
| Deaf male target | | | | | | |
| HC-HP | M .44 | .39 | .41 | .39 | .49 | .45 |
| SD .33 | .31 | .32 | .30 | .34 | .32 |
| HC-LP | M .50 | .48 | .49 | .25 | .35 | .31 |
| SD .22 | .21 | .21 | .19 | .37 | .32 |
| LC-HP | M .74 | .69 | .71 | .77 | .85 | .82 |
| SD .27 | .25 | .26 | .26 | .21 | .23 |
| LC-LP | M .85 | .84 | .84 | .80 | .85 | .83 |
| SD .21 | .21 | .21 | .21 | .18 | .20 |
| Deaf female target | | | | | | |
| HC-HP | M .48 | .42 | .45 | .40 | .48 | .45 |
| SD .35 | .27 | .30 | .27 | .31 | .29 |
| HC-LP | M .51 | .50 | .50 | .32 | .35 | .34 |
| SD .24 | .23 | .24 | .23 | .27 | .26 |
| LC-HP | M .70 | .67 | .68 | .75 | .80 | .78 |
| SD .30 | .27 | .29 | .29 | .23 | .26 |
| LC-LP | M .84 | .82 | .83 | .72 | .80 | .77 |
| SD .17 | .20 | .19 | .23 | .19 | .21 |

Note: EOC = evaluations of occupational competence; HC-HP = high-communication and high-prestige occupations; HC-LP = high-communication and low-prestige occupations; LC-HP = low-communication and high-prestige occupations; LC-LP = low-communication and low-prestige occupations.

Table 4 Results of univariate tests of between-subjects effects (D/HH vs. hearing)

<table>
<thead>
<tr>
<th>Hearing status group</th>
<th>Participant’s gender</th>
<th>Group × gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Partial η²</td>
</tr>
<tr>
<td>HC-HP</td>
<td>.01</td>
<td>.000</td>
</tr>
<tr>
<td>HC-LP</td>
<td>22.79**</td>
<td>.124</td>
</tr>
<tr>
<td>LC-HP</td>
<td>5.72*</td>
<td>.035</td>
</tr>
<tr>
<td>LC-LP</td>
<td>2.43</td>
<td>.015</td>
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</tbody>
</table>

Note. HC-HP = high-communication and high-prestige occupations; HC-LP = high-communication and low-prestige occupations; LC-HP = low-communication and high-prestige occupations; LC-LP = low-communication and low-prestige occupations.

* p < .05, ** p < .01.
the deaf male targets, the hearing males’ aspirations revealed stronger correlations \((p < .01)\) with the EOCs regarding the two types of occupation requiring intensive communication (HC-HP and HC-LP). However, no such difference emerged with regard to the low-communication occupations. With regard to the deaf female targets, the hearing males’ aspirations revealed stronger correlations \((p < .01)\) with the EOCs regarding the two types of highly prestigious occupations (HC-HP and LC-HP). The pattern of associations for hearing male participants regarding deaf female targets resembled that of hearing female participants. These findings seem to provide only weak support for the notion that same-sex associations between aspirations and EOCs would be stronger than cross-sex associations.

**Discussion**

This study compared D/HH and hearing adolescents’ EOCs of deaf adults, emphasizing the effects of evaluator and evaluatee gender on EOCs, and also investigated the relationships between D/HH and hearing adolescents’ own educational aspirations and their EOCs of deaf men and women.

The comparison of D/HH and hearing youngsters’ aspirations for their own future educational pursuits revealed that D/HH participants reported lower aspirations. This finding corroborates previous research where D/HH persons expressed a less positive self-image and a lower aspiration level (Egelston-Dodd, 1978; Montannini-Manfredi, 1993; Schroedel, 1992), even when they did not differ from their hearing counterparts in academic achievements (Weisel & Kamara, in press). It should be noted, however, that in this study, the difference between the two research groups may stem from the fact that most of the D/HH participants attended special classes in which the level of educational achievements was usually lower than in the general classes.

Our results conflicted with previous research that identified a lower level of academic aspirations among female adolescents when entering college, especially in high-prestige academic fields like science and math.

### Table 6  Correlation coefficients between level of educational aspirations and evaluations of occupational competence for deaf man and for deaf woman

<table>
<thead>
<tr>
<th></th>
<th>Deaf male targets</th>
<th>Deaf female targets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>HC-HP</td>
</tr>
<tr>
<td>D/HH males</td>
<td>31</td>
<td>.25</td>
</tr>
<tr>
<td>D/HH females</td>
<td>43</td>
<td>.34*</td>
</tr>
<tr>
<td>H males</td>
<td>35</td>
<td>.53**</td>
</tr>
<tr>
<td>H females</td>
<td>56</td>
<td>.15</td>
</tr>
</tbody>
</table>

*Note.  H = hearing; D/HH = deaf and hard of hearing; HC-HP = high-communication and high-prestige occupations; HC-LP = high-communication and low-prestige occupations; LC-HP = low-communication and high-prestige occupations; LC-LP = low-communication and low-prestige occupations.

*\(p < .05\), **\(p < .01\).*
When boys and girls left high schools with sufficient math credits to pursue a science major in college, many more males than females did so (Benbow, 1998; Betz, 1994). The lack of gender differences here may relate to methodological issues: the current participants were younger and were asked about academic aspirations rather than occupational expectations, as in most earlier studies. In addition, these participants were asked about the level of education they aspired to achieve (e.g., high school diploma, postsecondary training, college or university degree) and not about specific fields of study (e.g., humanities, social sciences, sciences).

An underlying assumption of this study was that adolescents’ educational aspirations would be related to their EOCs of others especially when those targets shared central characteristics with the participating adolescents, such as the same sex or hearing status. This assumption coincides with notions that aspirations are strongly associated with career development (Read, 1994) and that children form definite stereotypes about the gender appropriateness of specific careers, which influence their own career aspirations (Herring, 1998; Thiessen & Blasius, 2002). These previous studies on gender stereotypes, however, all referred to the relationships between one’s occupational aspirations and stereotypes and one’s own career. In contrast, this study considered associations between one’s educational aspirations and the career options attributed to hypothetical persons identified as either a deaf man or a deaf woman.

The results clearly demonstrated that normally hearing male and female adolescents revealed similar associations between their own aspiration levels and their EOCs of deaf women. However, these hearing males and females differed in their patterns of associations between their level of aspirations and their EOCs of deaf men. Adolescent males revealed statistically significant coefficients for three out of the four correlations, whereas adolescent females revealed only one. This provides only very weak support for the notion that same-sex associations between aspirations and EOCs would be stronger than cross-sex associations. These associations among hearing participants substantiate previous results that showed that individuals with higher self-esteem, as reflected here by higher levels of aspirations, tended to express more positive attitudes toward persons with various disabling conditions (Livneh, 1982; Siller, 1988).

In general, our findings showed that the D/HH participants’ level of educational aspirations did not relate to their EOCs for either deaf men or women. Our results contrast with those of Read (1994), Herring (1998), and Thiessen and Blasius (2002). However, our results showed general agreement with Lewkowicz and Liben’s (1998) study on 5- to 8-year-old deaf children’s gender stereotypes and self-endorsement of occupations. Although the children accurately identified the stereotypical occupations for each gender, they did not apply the same criterion for themselves.

The lack of significant associations between the level of aspirations and EOCs among the D/HH participants may suggest that perhaps the D/HH participants did not identify themselves with the targets. Bat-Chava (1994) argued that membership in a group of persons with a disability, or from a low-status minority, often threatens an individual’s self-image. One means of defense against such a threat comprises disassociation from the group. Such disassociation from “typical” deaf persons or from the D/HH group in general may sound like: “I am a hard-of-hearing person (or a deaf person) but I am not like them.” Such statements defend one’s own self-image while accepting, to some extent, society’s negative attitudes and perceptions of the group. If, indeed, D/HH participants disassociated themselves from their membership among deaf persons, this may reflect their understanding or even acceptance of the low social status often attributed to deaf people in Israel by the general public by parents of D/HH children, by deaf people themselves (Hurwitz et al., 1997; Weisel & Reichstein, 1991; Weisel & Zandberg, 2002), and by the educational system (Weisel, 1989). This line of speculation suggests that if the terms “hard of hearing” or “hearing impaired” had been used to describe the target adults, these adolescents’ responses may have been different. An interesting finding was that the high school programs that these youngsters attended were called “the hearing impaired project.” The word “deaf” may be more stigmatizing than other the other terms, thus possibly triggering the D/HH participants to disassociate.
themselves from it. To investigate this conjecture empirically, further studies should be undertaken.

Another possible explanation for the lack of association between the D/HH participants' level of aspirations and their EOCs, also somewhat speculative, is that these D/HH adolescents may not have been aware of the relevance of questions about the suitability of various occupations for themselves. It is possible that the D/HH participants were not that involved in establishing and developing career goals. The results of Furlonger's (1998) study supported this explanation, identifying D/HH adolescents as having less career awareness than their hearing counterparts.

In comparison to their hearing peers, D/HH participants evaluated both deaf men and deaf women as less competent at highly prestigious occupations that demanded little communication (LC-HP). That is, D/HH adolescents did not find occupations with high prestige as suitable for deaf men and women even when communication barriers were not relevant. These results about occupations that did not require intensive communication can be viewed as reflecting a general bias against deaf men and women. Although many of these D/HH high school students were studying toward matriculation examinations at the time of this study, indicating their own academic achievements, these unexpected findings suggested that these adolescents held poor perceptions of deaf individuals in general. These findings coincide with those of Hurwitz et al. (1997), who showed the relatively low EOCs for deaf people made by adult members of the deaf community in Israel. Hurwitz et al. suggested that the impact of hearing impairment may extend beyond academic experiences to career development efforts. Indeed, research on the impact of hearing impairment or learning disability on students' career development has highlighted the broad and long-term implications of the disabling condition. Hitchings, Luzzo, Retish, Horvath, and Ristow (1998) and Hitchings et al. (2001) found that 90% of students with learning disabilities were not actively engaged in the career development process. They had limited knowledge of the impact of their disability on their future goals. As a result, students revealed uncertainty as to whether they would reach their expressed career goals. In addition, these students believed that they had little control over the career decision-making process. Walter (1993) expressed concerns about the low level of deaf individuals' awareness about the requirements of the workplace and recommended interventions focusing on the development of work values. It can be assumed that D/HH, like students with learning disabilities, may spend extensive time learning to cope with their disability, therefore often leaving less time to explore possible career options or determine their strengths and weaknesses (Hitchings & Retish, 2000; Walter, 1993).

The finding that D/HH adolescents did not perceive highly prestigious occupations as suitable for deaf men and women, even when communication barriers were irrelevant, may indicate their lower career self-efficacy. Self-efficacy, comprising a belief in one's ability to perform specific tasks, a willingness to initiate specific behaviors, and persistence in the face of barriers and conflicts (Bandura, 1986), plays an important role in career development. Research indicates that academic self-efficacy strongly predicts academic achievement and perseverance (Hackett, Betz, & Casas, 1992). Adolescents' high self-efficacy in a specific occupation demonstrated a positive correlation with their willingness to choose this occupation (Tang, Foad, & Smith, 1999) and with their high career aspirations for that occupation (Nauta, Epperson, & Kahn, 1998). Low efficacy in certain occupations may contribute to individuals' premature elimination of those possible career options (Betz & Hackett, 1981).

One major source of self-efficacy comprises vicarious experiences provided by social models (Bandura, 1986). “Seeing people similar to themselves succeed by perseverant effort raises observers’ beliefs that they, too, possess the capabilities to master comparable activities” (Bandura, 1999, p. 3). The impact of modeling on beliefs of personal efficacy is strongly influenced by perceived similarity to the models. The absence of deaf adults in prestigious occupations and the limited number of deaf teachers in the Israeli educational system (Weisel & Zandberg, 2002) may be one possible explanation for these youngsters' low career self-efficacy.

With regard to the exacerbated status of deaf women in the world of work, indeed, both D/HH
and hearing participants in this study seemed to express a biased evaluation of deaf women. These findings substantiated previous research that were mentioned above, which underscored discrimination against women in general and deaf women in particular. Bias against deaf woman emerged especially with reference to occupations that required only a low level of communication, but neither did male and female participants differ with this regard nor did D/HH and hearing participants. In other words, this study found no support for the notion that D/HH participants tend to hold more gender stereotypic attitudes, as was often suggested in the literature (e.g., Egelston-Dodd, 1978; Lewkowicz & Liben, 1998; Stauffer & Long, 1990). Stauffer and Long reported that deaf males held fewer stereotypical perceptions than did earlier studies of deaf male participants. If these authors’ study indicated a possible trend of improvement in attitudes and perceptions due to more egalitarian social and cultural developments in western society that may lead to fewer stereotypical attitudes, such a trend could offer some explanation for the discrepancies between this study and earlier findings by Egelston-Dodd (1978), Lewkowicz and Liben (1998), and Stauffer and Long (1990). However, careful examination of the existence of such a trend among D/HH populations requires longitudinal research. These inconsistent findings as well as the difficult employment situation of deaf women (MacLeod-Gallinger, 1992; Sela & Weisel, 1992) pinpoint the complexity of women’s career development (Fitzgerald & Weitzman, 1992; Patton & McMahon, 1997), highlighting the need to expand knowledge concerning variations among women, with special attention to at-risk groups like D/HH women (Fitzgerald, Fassinger, & Betz, 1995).

As mentioned in the opening paragraph of this article, the full meaning that a child attributes to a given disability is construed by a combination of the child’s own outlook on the condition as well as by the surrounding environment’s social attitudes and perceptions of the condition. Our findings suggest that the meaning of deafness, particularly of being a deaf woman, is still affected by the tendency to pigeonhole deaf women into limited career choices, as noted by Egelston-Dodd (1978) over a quarter century ago. When these attitudes and expectations are internalized by adolescents, including D/HH adolescents, as demonstrated in this article, the improvement of female deaf adults’ employment situation requires intensive educational efforts. Along with Heppner and Heppner’s (2003) recommendation to create career programs based on their participants’ specific characteristics as well as special needs, the results of this study emphasized the need to focus on exploring and expanding occupational options for D/HH persons and for D/HH women in particular. The desirable change in the attitudes of hearing and D/HH adolescents about the successful employment of deaf persons can be achieved with appropriate efforts that include introducing live and simulated models (Zahn & Kelly, 1995).

This article did not address several important issues such as the comparison of EOCs for deaf males and females with EOCs for hearing males and females, the comparison of EOCs targeting other people with disability conditions, the evaluations of EOCs and occupational aspirations targeting the participants themselves, and the effect of familiarity with and knowledge about deaf people on adolescents’ attitudes and expectations. These issues deserve further research, with the aim of accumulating adequate knowledge to design effective career-promoting interventions.

References


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