

The self-esteem and cohesion to family members of deaf children in relation to the hearing status of their parents and siblings

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ABSTRACT

We examined whether for deaf children, the hearing status of both parents and siblings would have an effect on self-esteem ratings and perceived cohesion with family members. Forty-five deaf children (with deaf parents/deaf siblings; deaf parents/hearing siblings; hearing parents/deaf siblings and hearing parents/hearing siblings) participated. Deaf children with deaf parents had higher self-esteem than those with hearing parents. There was no main effect of sibling hearing status. There were main effects of cohesion scores for all family members; deaf children felt closer to deaf parents and deaf siblings than to hearing parents and hearing siblings. The quantitative findings are discussed and interpreted with the help of qualitative data from interviews with the children.

Key words: Deafness, self-esteem, cohesion, parents, siblings

INTRODUCTION

The effect of a child's deafness on the development of cognition and self-esteem, and on parental behaviour, has been studied by a number of researchers (e.g., Greenberg and Kusché, 1987; Meadow, 1980; Peterson and Siegal, 1999). While much research has focused on parental hearing status, little attention has been given to whether the hearing status of siblings may also affect the development of deaf children. Relations with siblings may in turn impact on friendships, and this may have implications for the structuring of school environments for deaf children.

A child's deafness may impact negatively on the hearing parent-deaf child dyad and on the child's development. Hearing parents of deaf children are more likely to become emotionally detached in the interaction with their children when a hearing loss is diagnosed (Luterman, 1987). Mothers of deaf children are reported to feel much more uncomfortable about smacking their

children than mothers of hearing children (Schlesinger and Meadow, 1972). Rodda (1966) and Gregory (1976) found that deaf children received fewer explanations from parents than hearing children about feelings, why things have been done, their role expectations and the consequences of certain behaviours.

Several studies have revealed significant differences between deaf children of deaf parents and deaf children of hearing parents. Deaf children of hearing parents have been reported to be more isolated, have lower acceptance, poorer communication and more psychological and behavioural disorders than deaf children of deaf parents (Anderson and Sisco, 1977). Deaf children of deaf parents are more likely to have experienced consistent parenting behaviour, effective communication and more tolerant social environments (Greenberg and Kusché, 1987). Barlow and Brill (1975) found that deaf children of deaf parents were better at the Stanford Achievement Tests, a measure of general cognitive abilities. Brill (1969) suggested that such findings are a result of the early use of manual communication in the deaf home. Deaf children of deaf parents have also been found to be more advantaged at school than deaf children of hearing parents (Meadow, 1967; Montgomery, 1966). Meadow (1980) argued that deaf parents provide effective role models for deaf children early in their development. This may lead to a positive impact on the development of identity and self-esteem.

Although these findings suggest an environmental explanation in terms of parenting behaviour and child's self-concept and self-esteem, genetic factors might contribute (Jensema, 1975). Schildroth (1976) reported better non-verbal intelligence scores in children who were deaf due to an inherited condition, rather than a non-hereditary aetiology such as meningitis. However, Vernon and Koh (1970) compared deaf children raised by deaf or hearing parents, where all the children had genetic-related deafness. Participants were matched for chronological age, non-verbal intelligence scores, and hearing loss. Although the hearing parents in this study were more intelligent than the deaf parents, it was the deaf children of deaf parents who were more successful in educational achievement. This suggests that even if genetic factors have some influence, the immediate environment that the child grows up in is an important factor.

Bat-Chava (1993) carried out a meta-analysis of 42 studies relevant to levels of self-esteem in deaf people; many of these were unpublished (32 were Master's or doctoral theses). The constructs analysed included type of school attended, communication mode used in classroom (no effects), group identification (positive effect on self-esteem), parents' hearing status, and communication mode used at home. Use of sign language rather than oral communication by parents was associated with higher self-esteem (a finding subsequently confirmed by Desselle, 1994). Twelve of these studies included parental hearing status as a variable. Deaf children with deaf parents had higher self-esteem than deaf children with hearing parents (effect size $d = .24$, $p < .001$). This finding was consistent,

regardless of what test or method of administration was used. However, these studies (and all the studies in Bat-Chava's review) are from North American populations, where most research has been carried out.

The impact of parental hearing status is also evident from personal reports of deaf people. Corker (1996) reported interviews with eight deaf people, whose childhood years and reports of obstacles had been quite similar in some aspects, as illustrated in this recollection by one man of the time when his deafness was diagnosed when he was a little boy:

He repeated the same kinds of tests that my mother and father had tried and eventually announced that I was deaf. My parents were broken apart. My mother and father were crying – I'd never seen them do that before. ... I remember feeling that awful sinking feeling inside because I didn't know what I had done as I had just been playing with them while the tests were done. I wanted to know what was going on – I didn't understand. I thought I was responsible for their tears and I was very worried (Corker, 1996: 69).

This experience can be contrasted with that of some deaf parents (but not all), who express joy in having given birth to deaf children because of a shared identity, and a shared culture and, most plausibly, greater ease of communication.

This research has focused on the impact of parents on deaf children's development. Yet, siblings also have a large impact on a child's development, generating strong emotions of love, rivalry, jealousy and competition (Dunn and Kendrick, 1982; Klagsburn, 1992). There has been research into families where one sibling has a disability, but most of this work has focused on the impact on the sibling(s) without a disability (Fennell et al., 1992; Klagsburn, 1992; Harvey and Greenway, 1984; Carandang et al., 1979). For example, Harvey and Greenway (1984) found an adverse effect on the normal children's measured self-concept if they had a sibling with a physical handicap. Bank and Kahn (1982) looked at disturbed siblings and their 'well' siblings, and concluded that the disturbed child had usually been the focus of most of the attention from the family for many years. The disturbed sibling's difficulties were also always seen as much more serious than those of the 'well' sibling. This study primarily addressed how the 'well' sibling could be adversely affected by having a disturbed sibling, but in addition the researchers concluded that '...the disturbed sibling also derives a distinct identity, albeit an unhappy one, from the contrast with a well brother and sister' (Banks and Kahn: 233).

Corker (1996) focused briefly on the sibling relationship in relation to emotional development in some of the adults she interviewed. Sibling rivalry was reported where a deaf child from a hearing family thought that the hearing sibling received more love:

Karen and Peter, for example, both felt a degree of sibling rivalry, suggesting that their hearing sibling was loved more or received more attention than they did, and both

struggled with negative feelings of shame at the jealousy they felt. 'I can remember very clearly my feelings of shame. I always felt my parents loved my sister more than they loved me, but as soon as I felt jealous, I began to feel that was wrong and more shameful' (Karen); 'I still wish I had more information when I was young. I needed more understanding. I always felt my hearing brother had more attention. But he was much younger, and I was jealous of him, I think' (Peter) (Corker: 79).

Kusché et al. (1983) compared three groups of children: deaf children with deaf parents; deaf children with deaf siblings and hearing parents; and deaf children with hearing siblings and hearing parents. The first two groups had a genetic aetiology of deafness, and the third had non-inherited deafness. In the areas of intelligence, vocabulary, reading comprehension, and achievement scores, the deaf children with deaf parents scored highest (in line with previous findings), but in addition those deaf children of hearing parents who had a deaf sibling(s) scored higher than those who had a hearing sibling. This points to a beneficial effect on the deaf child's development of having a deaf sibling rather than a hearing sibling.

Self-esteem was not measured in Kusché et al.'s (1983) study, and we know of no previous quantitative studies that have looked specifically at the effect of siblings on deaf children's self-esteem, or quality of family relationships. This led to the design of the present study.

We hypothesized that a four-group design would yield a significant hierarchical pattern in the relationship between self-esteem and the hearing status of parents and siblings. Those who had deaf parents and deaf siblings (DP/DS) would report highest self-esteem, followed by those who had deaf parents and hearing siblings (DP/HS), then those who had hearing parents and deaf siblings (HP/DS) and finally those with hearing parents and hearing siblings (HP/HS).

Due to the frequent anecdotal reports of a lack of good communication and empathy experienced by deaf children in hearing families, we also predicted that they would perceive lower cohesion to other members of their family, with deaf children from deaf families producing a more cohesive representation. A further specific prediction was that there would be closer cohesion between a deaf child and a deaf sibling, than between a deaf child and a hearing sibling.

METHOD

Design

A two-way within-participants design was used; the first independent variable was the parents' hearing status, with two levels: both deaf or both hearing. For simplicity of analysis and interpretation, we decided not to include parents of mixed hearing status (who in addition are a less frequent group). The second independent variable was the siblings' hearing status, with two levels: deaf or

hearing (most children had only one sibling; for those who had two, they were asked to focus on the oldest child). There were four dependent variables; the deaf child's self-esteem score, and his/her cohesion scores to mother, father and (oldest) sibling respectively.

Participants

Participants were 45 deaf children (age range 10–14 years). There were 10 children with deaf parents and deaf siblings (DP/DS); four with deaf parents and hearing siblings (DP/HS); 11 with hearing parents and deaf siblings (HP/DS); and 20 with hearing parents and hearing siblings (HP/HS). Participants were recruited by visiting schools or families in various sites in England that had deaf children; although considerable efforts were made to increase the numbers of children with DP/HS, these were hard to find, possibly because of likely genetic influences within families where both parents are deaf.

Measures

Self-esteem: The Battle 'Self-esteem' Inventory (Form A: Battle, 1981) was used. It has been factor analysed into five components, two of which, General and Social, were selected as appropriate to this study; this reduced the test from 50 items to 30. These 30 yes/no items were amended slightly to match the general expected standard of English in the participants. For example, 'I spend a lot of time daydreaming' was amended to 'I do a lot of daydreaming'; 'I often feel ashamed of myself' was amended to 'Many times I feel I have done wrong things'. These changes were necessary to obtain reliable responses from these deaf children, whose reading abilities were generally expected to be below that of their hearing peers (Marschark, 1993). A total self-esteem score was calculated from all the responses (maximum score 30). While most of the children were able to read and understand the items, sign language interpretation was readily available at all times. There is no equivalent test of self-esteem in British Sign Language.

Family cohesion: the Family Systems Test ([FAST], Gehring and Wyler, 1986; Gehring et al., in press) was used. Wooden figures are placed on a chequer board to show how close individuals feel to their family members. The process is similar to 'family sculpting', a family therapy technique. This test was specifically chosen because of its visual way of showing individual perspectives, which is most appropriate to deaf children as they often have a limited level of English production and comprehension. The FAST has good psychometric properties (Gehring and Feldman, 1988). The materials were a wooden board 45 cm × 45 cm divided into 81 squares each 5 cm × 5 cm, eight large wooden figures (four 'men' and four 'women' as indicated by shape), and 12 smaller

wooden figures (six 'boys' and six 'girls' as indicated by shape). Cohesion scores were calculated by measuring diagonal distances between the deaf child and other figures. The minimum distance score was 1, and the maximum possible distance between two figures would be 11.3. A high score indicates a distant relationship, whereas a low score implies a close relationship.

Procedure

All interviews were done on an individual basis at the school the child attended, in a private room, with the exception of two children who were interviewed in their homes. Participants were asked if they would fill in a questionnaire that would last about five minutes; a number rather than their name was used in order to emphasize that the whole interview would be confidential. They were asked to be as honest as possible, and when in doubt, to ask the interviewer. Whatever method of communication the participant required (speech/lip-reading, sign-supported English or British Sign Language) was used. After the questionnaire, and having checked if the participant was satisfied with his/her answers, the FAST test was carried out. First a hypothetical family was presented to the participant, to illustrate how placement of the figures could be used to show closeness (cohesion). Then the participant was asked to show his/her own family, placing him/herself first, anywhere on the grid. Next, s/he was asked to place the sibling (if they had more than one sibling, they were asked to focus on the oldest sibling), the mother and, finally, the father. The participant was reminded that the grid was to show how close he/she felt towards his/her family. Once the participant indicated s/he was happy with his/her layout, this was recorded. The participant was then asked to explain why s/he had placed them in that way. One or more of the following questions were then used, according to the participant's initial explanation, to prompt more detail:

'That's interesting, Mummy is over here and Daddy is over there. Would you like to tell me more?'

'That's interesting, your brother/sister is here, and you are there, why is that?'

'Do you understand everything your parents say to one another?'

'If your family were all hearing/deaf, would it be any different? Show me' (if the parents were deaf, asked 'if all hearing'. If the parents were hearing, asked 'if all deaf').

The interviewer made notes of responses, and for the last question any changes to the grid were recorded.

RESULTS

Two-way independent groups Anovas were carried out (factors: hearing status of parents; hearing status of siblings).

Self-esteem: There was a main effect of parents' hearing status, $F(1,41)=15.54$, $p<0.001$. Children with deaf parents had higher self-esteem than those with hearing parents, 23.4 vs. 17.2. Siblings' hearing status did not have a significant effect on self-esteem scores $F(1,41)=0.86$ not significant, (n.s.) There was no interaction between parents' and siblings' hearing status, $F(1,41)=0.27$, n.s. See Figure 1.

Cohesion to father: There was a main effect of parents' hearing status on cohesion scores, $F(1,41)=16.61$, $p<0.001$. Children with deaf parents were closer to father than those with hearing parents, 1.36 vs. 3.02. Siblings' hearing status did not have a significant main effect on cohesion scores, $F(1,41)=0.37$, n.s. There was no interaction between parents' and siblings' hearing status, $F(1,41)=0.01$, n.s. See Figure 2.

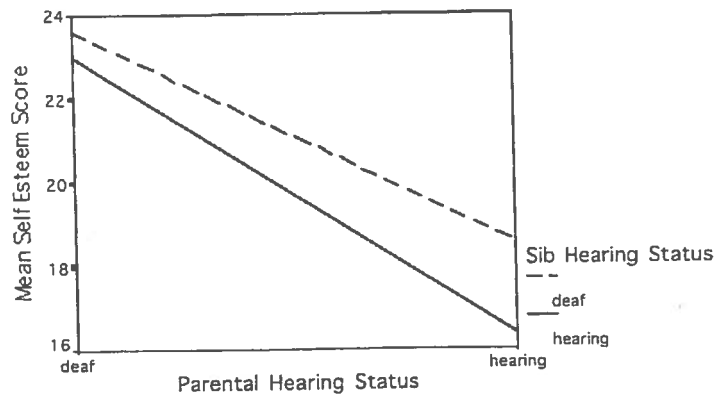


Figure 1: Self-esteem scores of deaf children, by deaf/hearing status of parents and sibling

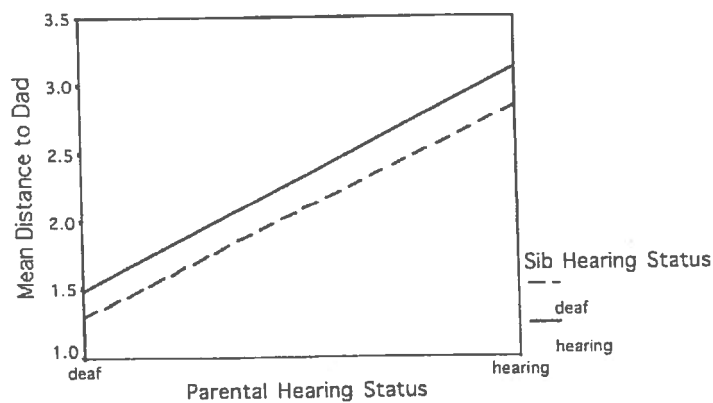


Figure 2: Distances from deaf children to father, by deaf/hearing status of parents and sibling

Cohesion to mother: There was a main effect of parents' hearing status on cohesion scores, $F(1,41)=11.77$, $p<0.002$. Children with deaf parents were closer to mother than those with hearing parents, 1.17 vs. 2.39. Siblings' hearing status did not have a significant main effect on cohesion scores, $F(1,41)=0.24$, n.s. There was no interaction between parents' and siblings' hearing status, $F(1,41)=0.36$, n.s. See Figure 3.

Cohesion to (oldest) sibling: There was no main effect of parents' hearing status on cohesion scores, $F(1,41)=0.00$, n.s. Siblings' hearing status had a significant main effect on cohesion scores, $F(1,41)=14.61$, $p<0.001$. Children with a deaf sibling were closer to that sibling than those with a hearing sibling, 1.08 vs. 2.30. There was no interaction between parents' and siblings' hearing status, $F(1,41)=0.23$, n.s. See Figure 4.

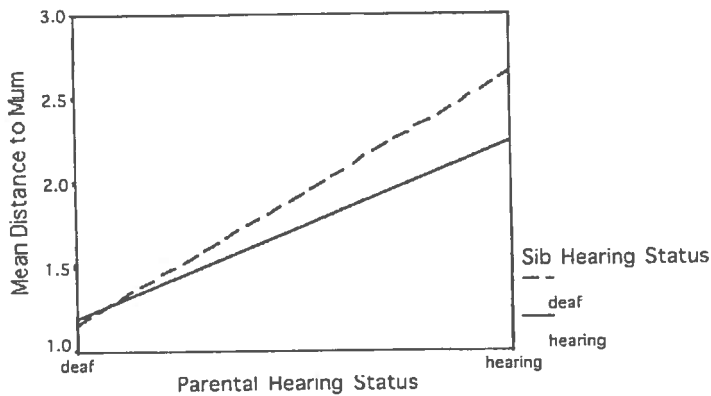


Figure 3: Distances from deaf children to mother, by deaf/hearing status of parents and sibling

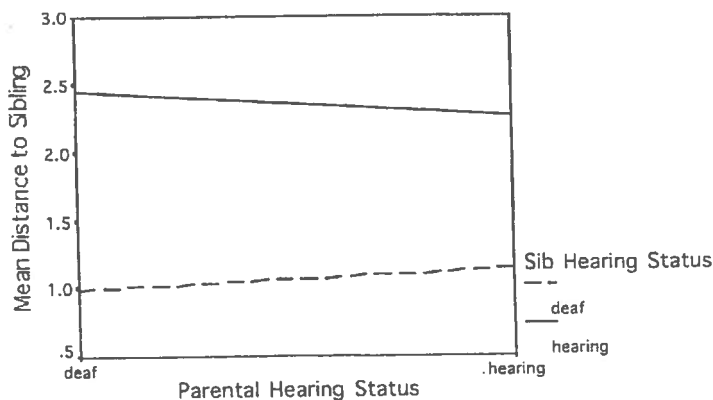


Figure 4: Distances from deaf children to sibling, by deaf/hearing status of parents and sibling

If your family ...?: When asked how their family would be different on the FAST display, if their parents were deaf (if hearing), or hearing (if deaf), most of the children (39/45) made changes. All 14 children of deaf parents moved the family figures outwards (less cohesion) if asked to imagine their parents were hearing. Of the 31 children of hearing parents, six made no changes if asked to imagine their parents were deaf, but 25 moved the figures closer (greater cohesion). The difference in response was highly significant, $\chi^2=55.8$, $p<.001$.

QUALITATIVE INTERVIEWS

Participants' number codes (1-45) are given in parentheses at the end of quotes used. Quotes were interpreted into English by the interviewer if given in sign language syntax.

Deaf parents and deaf siblings

Interviews held with these children supported the quantitative findings of relatively high self-esteem and close family structure (often a 2 × 2 placement of figures together). These children appeared to be more competent in describing their feelings than children in the other groups. It was often commented how similar the children felt to their immediate family members.

'We are all close, never left out ... If I have problems I always tell my Mum and Dad who often understand my view' (6).

'We are all close, we are the only "all Deaf unit" in the entire family. When we go out we feel the same, our (hearing) grandparents are speaking with the rest of the family, but we feel the same, and understand one another' (12).

The importance of accessing parents' conversations was also commonly reported.

'I understand all of my Mum and Dad's conversations' (11).

'I know what Mum and Dad say to each other and what their friends say too' (28).

This availability of role models and access to adults' conversations can be seen to encourage a good sense of self and high self-esteem.

Sibling relationships were reported to be more positive than in the other groups. Children saw their sibling as a role model if they were older, and reported ease of communication with them. 'My brother is Deaf and I like him, he is always showing me different things and tells me how to cope with problems. I feel he is like my future as he is Deaf too' (6).

'My sister can empathize with me because she is Deaf. We can help each other out in times of need' (11).

'I like my brother, we play, talk and he is kind to me. We have a few fights! Its easy to understand my brother, and easy to relate to him' (28).

Deaf parents and hearing siblings

It has to be noted that only four children were found and interviewed for this category. This is a rare type of family. Comments about parents were often similar to the previous group discussed, where children had access to their parents' own conversations, and could easily identify themselves with them, but some anxieties were revealed when sibling relationships were discussed:

'I understand everything my parents say to one another. My sister's signing is not too bad because she is hearing. I sometimes understand her. She doesn't talk to me much because I am Deaf' (8).

Difficulties with accessing parents' dialogues with their siblings were reported:

'When my parents speak to my brother, I don't understand what they are actually saying, which is frustrating, as they don't sign to him. My brother's level of signing is not bad, because he is hearing' (7).

The immediate availability of local hearing friends for their siblings as opposed to distant deaf friends for themselves was mentioned:

'Adrian is always out with his friends, partying. My parents stay at home looking after me. My Mum and Dad sign and I understand everything they say. I think I am the closest to Mum and Dad as I am Deaf' (7).

The hearing sibling's ability to interpret from spoken speech to sign language can be a barrier to the development of a normal sibling relationship, where the deaf child relies on the sibling to interpret:

'Amy and I may share a hearing friend, only if the friend can sign, but if the friend can't, I will use Amy to interpret for me' (8).

This network of immediate accessible hearing friends for their siblings might add to the child's awareness of his/her own limitations and hence act to reduce his/her self-esteem. With a hearing sibling rather than a deaf sibling, one is more acutely aware of being unique within a limited population of friends. However, the consequent closeness to deaf parents might buffer this possible effect on self-esteem, although closeness to sibling would still be affected.

Hearing parents and deaf siblings

These children gave more heterogeneous information, because of varying levels in parents' communication methods and fluency, as well as in the siblings' level of hearing. Overall, the lower level of self-esteem in this group was found to be tied in within the complex dynamics of this type of family.

For some children, there was a strong sense of a deaf identity helped by the presence of a deaf sibling, but only as long as communication was fluent between them:

'My sister is deaf and signs well, helps me to understand a lot. It's interesting. She can speak and helps me to pronounce words properly' (20).

This can be contrasted with another child who said:

'Brother is Deaf like me. Parents hearing. I understand a little of what they say to each other. Brother signs less than me' (37).

Some of the children were evidently aware of the impact of having a deaf sibling:

'If my brother hearing [moves dyad to far corner] because of no communication' (47).

The hearing status of parents is not the only factor that prevents a strong bond with them; for one child this was amplified by not sharing a common language:

'Parents speak to one another in a foreign language, I don't understand my native language. My sister is next to me [in the FAST plot] because we both are Deaf and sign, its easy to relate to each other' (24).

The frustrations of language fluency at home can be related to the generally lower levels of self-esteem found in this group. The presence of older deaf siblings can also increase the anxiety and frustrations towards hearing parents:

'I don't respect my Mother as she does not respect me, doesn't help me enough. My Deaf brother hates my Dad, for not helping [communicating] enough. My younger [hearing] sister would be next to me because she signs and copies me' (48)

A greater level of spoken competence in the deaf sibling can lead to sibling rivalry:

'My brother is the favourite of my parents, he ignores me, and my parents ignore me too. My brother has better speech than me and hears more than me. My parents talk a lot, I don't understand, and they tell me to mind my own business. They talk to my brother more' (24).

The issue of friends was also raised in this group:

'My hearing friends don't sign, they are siblings of my Deaf friends. I prefer to be with Deaf friends, there is more sign language and empathy. Hearing people can't understand why we use BSL. If all are Deaf, means we can understand and have good times' (20).

'If all Deaf, it would be more cohesive, but I will still have my own friends and my sister, her own friends. This is because there are better conversations, and understanding. I don't have any Deaf friends as they live far from here. I do go to a Deaf youth club in [X] sometimes, and have some deaf friends there, but the hearing friends in the grid are those who live near me.' (14).

Hearing parents and hearing siblings

These interviews revealed anxieties and ambivalent and sometimes hostile feelings, which may be related to the relatively low self-esteem found in the quantitative analyses, and the lower cohesion to family members (in which the child often placed him/herself away from the rest of the family). There

were many comments regarding difficulties in communication and how different they felt from their immediate family members:

'I never understand what my parents say to each other. I tend to ignore this now' (36).

'I don't understand my parents' conversations, I feel left out. My family often talk amongst themselves, it's making me worried and frustrated' (13).

'Mum and Dad talk a lot to each other, and I don't understand which makes me feel angry. I wish Mum and Dad could sign' (42).

'I have a nice family. My parents do not sign. My family are all hearing. No one signs. My parents talk a lot, I don't understand what they say, I just day-dream. My brother is at boarding school. I understand very little. If they all signed I would understand a lot more' (31).

'I don't understand them, no one signs. My parents talk to my brother more than me. I am jealous as they can hear, I don't have subtitles. My family watches TV and don't tell me what it is saying. They only slow down when they talk to me. At dinner, they all talk too fast, I feel horrible' (33).

The sibling relationship in these families was often found to be strained or distant. Communication was a large factor here, with attitude towards sign language often important:

'My brother can't sign at all, he doesn't like sign language. My brother's friends are nervous of me' (16).

'My brother won't let me join his friends because he is embarrassed. He has his own friends, my friends are Deaf. My brother won't learn to sign, my Mum is trying to teach him' (49).

Some children reported an element of jealousy with their sibling:

'I am sad when they [the family] speak amongst themselves. I am jealous of brother, if only he could sign more. I have no conversation with my father, my mum is boring and watches TV a lot' (40).

However other children were proud of their siblings:

'My brother can sign more than my parents. I wish they would sign' (40).

The issue of friends was again prominent in the interviews:

'Sometimes my hearing friends chat away with my brother and I don't understand everything they say to each other, I wait until the end and then ask' (13).

'Lots of my hearing friends talk to my sister more' (35).

Being left out of conversations between one's own friends and one's sibling would be likely to be detrimental to one's self-image. Nevertheless, other deaf children had a strong concept of how deaf friends were different to hearing ones:

'The best is deaf friends because I am with them all the time, can sign and there is more fun. If they can't sign, it means boring and not fun. My brother's friends rarely sign. Our friends can sign more than his friends, I teach them' (17).

Comment on the interviews

The interviews with the children revealed a lot of interesting detail that can only be partially presented here, but they do tend to support, and give further insight into, the quantitative results obtained. One problem in the analysis of the deaf children's friends was their perspective of what a friend really was. Many children in the last two groups did not consider their deaf friends at school to be real friends; they saw friends as being people you saw at home. A common finding in hearing families of deaf children is that they expect their deaf child to find it dangerous to travel on their own. Therefore a circumscribed life could have been enforced on these deaf children, which may have had an effect on their perspective on identity and friends.

DISCUSSION

The findings partly supported the hypothesized relationship between participants' measured self-esteem and the hearing status of the parents and siblings. Deaf children of deaf parents had higher self-esteem scores than deaf children of hearing parents. This pattern held regardless of whether the sibling was deaf or hearing. There was a tendency for those with deaf siblings to have slightly higher self-esteem scores than those with hearing siblings, and parents of the same hearing status. However, neither the main effect of sibling hearing status nor the interaction between parents and siblings was significant. Parental hearing status is clearly the more influential factor with regard to deaf children's self-esteem, at this age range. The finding regarding effect of parent's hearing status is not new (Bat-Chava, 1993), but this is the first report we know of in a non-US (English) population.

The results from the FAST measurements gave support to the hypotheses regarding cohesion of deaf children towards family members according to hearing status. For cohesion to both fathers and mothers, there was a similar pattern to that for self-esteem ratings. There was a closer relationship between deaf children and deaf fathers, than deaf children with hearing fathers; and between deaf children and deaf mothers, than deaf children with hearing mothers. The absence of an interaction between parents and sibling hearing status shows that parental hearing status is more important in this respect.

The findings from both the quantitative and qualitative data support Meadow's (1980) claim that deaf parents are an effective role model for deaf children; and that the early use of manual communication by parents is appreciated. The lower self-esteem of deaf children with hearing parents, and their anxieties and ambivalent feelings as seen in the qualitative data, reiterate the findings of Rodda (1966) and Gregory (1976) about the negative consequences for identity and self-image if communication with parents and understanding from parents is, or is perceived to be, poor.

The hearing status of parents, and ease of communication and understanding, may have impact in other areas than self-esteem; including theory of

mind abilities – being able to understand that others have their own mental states. There has been some evidence that native signers (often deaf children with deaf parents) demonstrated theory of mind on a par with hearing counterparts, whereas late signers (often deaf children of hearing parents) were significantly delayed in theory of mind (Peterson and Siegal, 1999). Having access to others' conversations may allow an insight to others' perspectives and hence socio-cognitive growth.

A small but consistent trend was found for sibling hearing status to relate negatively to self-esteem. This was not statistically significant, but may deserve further examination with a larger sample. Deaf children did feel closer to their siblings if the sibling was also deaf. In the analysis of sibling cohesion, sibling hearing status was the main effect, and parental hearing status was not. There was no interaction between these two variables. This is an important new finding that deserves further exploration. The interviews revealed many instances of sibling rivalry, accentuated when the sibling was hearing; as in Corker's (1996) discussion about sibling rivalry in two deaf interviewees.

This study was clearly limited in its methodology. Finding DP/HS participants was not easy, hence the small number in this group. Assessments were also not done blind to condition. However the interviewer (TW) was hearing impaired himself, which may have assisted the ease of communication, in both production and comprehension, with the deaf children.

The self-esteem measure, while widely used for hearing children, had limitations in this study. This was not so much due to the question structure (which was amended where necessary), but to the context that some questions refer to. Deaf children generally have two communities, deaf and hearing. When they are asked to respond to the statement: 'Children pick on me very often', the two worlds are not being differentiated, which leaves them in a more uncertain position than hearing children, when asked to respond simply 'yes' or 'no'.

However, the FAST test was found to be an appropriate measure to use with the deaf children. It was evident that the children found this task to be fun, and it was easy to administer and record. It is a visual way of getting information from deaf children without levels of English being a barrier, as is commonly found in such assessments. In addition it formed a useful adjunct to the interviews, as children often referred to the figures or moved them about as they answered the questions.

The level of deafness in each participant was not recorded. Some participants used sign language and others used speech. Some went to residential schools, others went to day schools. There may have been some hearing parents who used sign language fluently, and some deaf children who lip-read well, hence making the selection rather diversified. However, this variety of participants may mean greater generalizability of the main findings.

There are other factors which should be controlled for, such as parents' income, communication, reading age levels and intelligence. It would be important to control for intelligence in a replication because it has been

found that DC/DP and DC/HP differ on cognitive scores (MacSweeney, 1998). It would also be desirable to measure the parents' self-esteem and see how it relates to their children's self-esteem.

Future research might use the Locus of Control (LOC) measure described by Rotter (1966). It assesses the degree of responsibility which people take for themselves. Those who have a stronger internal LOC take responsibility for their own behaviour and views, are more self-confident in their decisions and seldom seek authority for guidance. Thus the LOC may be a good measure of personal adequacy. Bodner and Johns (1977) have suggested that deaf people tend to be more external in their LOC than hearing people.

The findings from this study may have important implications for the parenting and education of deaf children. Hearing parents and siblings could help the deaf child by making more effort in sign language, and generally by being more aware of the deaf child's feelings and tendency to lower self-esteem and feelings of marginalization in the family. Friendship with other deaf children may be important. If a deaf environment appears to stimulate a high sense of self, security, and enough cognitive, social and emotional growth, it may (depending on the amount of hearing the child has) be wrong to put deaf children into large classrooms of hearing peers such as mainstream school environments, unless there are sufficient deaf peers that they can form their own group identity (Bat-Chava, 1993). It would be interesting to look at the wider social network of the deaf child; and in particular the availability of deaf friends, both near home and within the school setting, and the extent to which such friends are welcome in the home environment.

In conclusion, this study has shown that self-esteem ratings given by 45 young deaf children aged between 10 and 14 are strongly influenced by parental hearing status; as is their perception of cohesion with parents. Their perceived cohesion towards siblings was found to be significantly dependent on sibling hearing status. Qualitative interviews revealed that ease of communication and understanding between parents and siblings, and relations with friends and friends of siblings, were important salient factors in the deaf child's world. This seems to be the first study to examine the relationship of sibling hearing status with deaf children's self-esteem and sibling relationships. More research is needed into the social networks of deaf children, both within and outside the family, to identify the key areas of importance for self-esteem and social and cognitive growth, and to inform future child-rearing, and sibling relationship programmes.

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