

Emotional wellbeing in deaf children and young people, and their families



A literature review by the National Deaf Children's Society

1 Introduction

This literature review is divided in two parts. The first section focuses on emotional wellbeing in deaf children and young people, while the second section (see Section 6) focuses on emotional wellbeing in parents of deaf children and young people. The questions that this review seeks to answer are provided at the beginning of the relevant section.

2 Executive summary

2.1.1 Emotional wellbeing in deaf children and young people

Estimates concerning the prevalence of emotional wellbeing difficulties in deaf children and young people can vary from between 11% to 63% with some studies suggesting a higher rate of prevalence in deaf children and young people when compared to hearing peers. The variation in rates can be attributed to differences between studies in their scope and the type of assessment used. Consequently, caution is needed when comparing results across studies. Additionally, due to the heterogeneous nature of the deaf population and the limited scope in some studies, it is often difficult to generalise the findings to the wider population of deaf children and young people.

Bearing in mind the above issues, a range of factors has been associated with a greater prevalence of emotional wellbeing difficulties in deaf children and young people. Across studies, having an additional disability was consistently associated with an increased likelihood of emotional wellbeing difficulties. Good language and communication ability were associated with better emotional wellbeing. Other factors were also important but patterns associated with these factors differed across studies or were not highlighted across studies to the same extent. This may be due to differences in research design, eg focusing on a specific group of deaf children with a specific level of deafness. These factors were school type, IQ, gender, age, onset and degree of hearing loss, use of cochlear implants, and hearing aids.

Nearly all the studies included in this review were cross-sectional. Although informative, longitudinal studies which follow children across different time periods are needed to develop a more accurate picture of how factors (such as those mentioned above) impact on emotional wellbeing over time.

This review identified few studies which assessed effective interventions for improving emotional wellbeing in deaf children and young people. Interventions which were considered to play an important role include early intervention in identifying deafness and providing support to families, the development of good social skills essential for forming and maintaining long-term relationships, as well as promoting self-esteem and a sense of identity. The internet (or more specifically, online interaction with others) is suggested to be an effective tool for socialisation. Training for professionals (eg teachers) in techniques for promoting positive wellbeing (from early years to adolescence) is also considered to be effective in this respect. It was also noted that the impact of recent advancements on emotional wellbeing (eg newborn screening programmes, improvements in technology and changes to educational programmes) is not yet fully understood and bears further research.

2.1.2 Emotional wellbeing in parents of deaf children and young people

Compared to studies focused on deaf children and young people's wellbeing, there are few studies which focus on the prevalence or likelihood of emotional wellbeing difficulties in parents of deaf children.

The studies described in this review looked at levels of stress in parents of deaf children and reported conflicting findings when comparing levels of stress in this group with parents of hearing children. However, these studies tend to look at general issues in raising a child. Studies which focus specifically on challenges which are unique to raising a deaf child tend to report higher levels of stress among parents of deaf children. Increased parental stress was also associated with poor language and communication ability in children and having children with additional disabilities. Deaf parents of deaf children were also less likely to be stressed when compared to hearing parents of deaf children.

There is very little research on the impact of emotional wellbeing difficulties on parenting behaviour or the deaf child's own wellbeing. Some studies do assume a link between increased parental stress and emotional wellbeing difficulties in children and suggest that improving parental stress (eg by providing advice on communicating with a deaf child) may help alleviate difficulties experienced by the child.

Few studies directly assess effective practices aimed at improving emotional wellbeing in parents of deaf children. Some suggestions have been put forth in the literature however. Access to services, information, and social support infrastructure are associated with lower levels of stress, as are early intervention programmes. A family-centred approach, empowering parents to make informed choices regarding their child's development and education, beginning in the early years and continuing into the child's adolescence is also recommended as good practice. Improving awareness amongst professionals can also play an important role in alleviating stress. For example, audiologists could consider the impact of additional disabilities on parental stress and make adjustments (eg joining up appointments) to mitigate their effects.

3 Methodology

This literature review is not meant to be exhaustive. Online databases (eg PubMed, Web of Science) were searched using relevant search terms (eg emotional wellbeing, deaf, parents) and limited to papers published after 2000. As a first pass, papers were selected based on an initial scan of titles and abstracts. In the second pass, papers were then reviewed to determine if they fell within the scope of this literature review. References cited in each paper were also reviewed to identify any key texts that did not appear in our initial search. This resulted in a total of 45 papers for this literature review.

In the final set of papers selected for this review, a range of terms is used to refer to emotional wellbeing difficulties (eg emotional behavioural difficulties, psychosocial difficulties). For consistency, emotional wellbeing difficulties will be used throughout. However, definitions of these terms can vary and the type of behaviour assessed in each paper can differ so any comparisons made across studies should be made with caution.

4 Emotional wellbeing in deaf children and young people

With respect to the emotional wellbeing in deaf children and young people, this literature review sought to answer the following questions:

- What does recent research say on the prevalence or likelihood of any emotional wellbeing difficulties among deaf children or young people? Is it possible to identify a 'range' of prevalence estimates on which there may be a reasonable consensus?
- What is the nature of those difficulties? In particular:

- Does research provide any insight into when such difficulties are likely to occur (for example, at points of transition in a young person's life) and if there are particular vulnerabilities or 'trigger' points?
- Does research tell us anything about the extent to which any emotional wellbeing issues are linked to a child's deafness or are 'exacerbated' by their deafness?
- What interventions, if any, have been found to be effective in preventing emotional difficulties from arising?
- What interventions, if any, have been found to be effective in supporting deaf children or young people experiencing emotional wellbeing difficulties?

4.1 Determining prevalence of emotional wellbeing difficulties

4.1.1 Methodological issues

As a first step, it is important to consider how emotional wellbeing might be characterised. The studies discussed in this section often use different assessments to determine emotional wellbeing. Some studies use the Child Behaviour Checklist (CBCL) (Van Eldik et al. 2004; van Gent et al. 2007; Remine and Brown 2010), the Youth Self Report (YSR) (Cornes et al. 2006; Remine and Brown 2010), the Teacher's Report Form (TRF) (Cornes et al. 2006; van Gent et al. 2007) or the Strengths and Difficulties Questionnaire (SDQ) (Hintermair 2007; Laugen et al. 2016; Stevenson et al. 2017).

These measures often provide an overall total difficulties score as well as scores on subscales measuring specific aspects of behaviour. For example, the CBCL will provide an overall score on a *total problems scale* and scores on subscales labelled as *internalising* (eg acting withdrawn or feeling anxious and depressed) and *externalising* (eg delinquent and aggressive behaviour). In addition to this, there are scales for social problems, thought problems, and attention problems. The SDQ also provides an overall total difficulties score as well as scores for five subscales: emotional symptoms, conduct problems, hyperactivity inattention, peer relationship problems, prosocial behaviour.¹ Comparisons are often made by referring to the overall total difficulties score. However, studies can also make comparisons according to specific subscales (eg Laugen et al. 2016).

These measures are also considered to be broad assessment tools which do not provide a diagnosis of a specific mental disorder. It has been noted that few studies focus on the prevalence of specific disorders associated with mental health in deaf children and adolescents (Theunissen et al. 2014). This is an important issue to bear in mind.

It is also important to consider the heterogeneous nature of the deaf population when reviewing a study's conclusions. Studies discussed in this review often caution against generalising their findings to the wider deaf population. There are two main reasons for this. The study in question may have focused on specific groups of deaf children (eg those who are in residential or special schools) and cannot be considered representative of deaf children generally. Studies may also have neglected to include factors such as additional disabilities which may have an impact on the rate of prevalence (in some cases, this information may not be available to them to include in their analysis).

One also needs to consider who is being consulted in each study. This could be either the parent, the teacher, or the child/adolescent themselves. The rate of prevalence may well vary depending on these respondents. Teachers and parents may be better at identifying external problems (eg bad behaviour) than internalised problems (eg feeling depressed) which may be masked by the child. When responding to self-reports, children or adolescents may either be overconfident when describing their wellbeing or may feel

¹ The total difficulties score on the SDQ is calculated by adding together scores from emotional symptoms, conduct problems, hyperactivity inattention, and peer relationship problems.

uncomfortable in disclosing their feelings. These factors can lead to variation in reported prevalence rates. For example, Fellingner et al. (2008) illustrate how parents of deaf children appear to be unaware of problems of isolation and physical complaints in their deaf children. To address this issue, it is suggested that ratings are collected from multiple sources. However, some studies only report findings based on a single group of respondents (eg Hintermair 2007).

Nearly all the studies included in this review focus on a single time point (ie they are cross-sectional in design). Studies that look at how emotional wellbeing is affected at different time points (ie longitudinal studies) provide stronger evidence for factors that are consistently associated with emotional wellbeing. Unfortunately, there is a lack of longitudinal studies focused on deafness and emotional wellbeing (Stevenson et al. 2017).

Lastly, these studies also use cut-off scores to determine the number of participants who fall within the clinical range. For example, the Strength and Difficulties Questionnaire provides a total difficulties score between 0–40. Scores that are above 16 generally indicate that the child in question needs to be seen by a medical professional for further assessment. These cut-off scores are determined by comparing scores based on a clinical sample (a group of children who are currently receiving medical attention for a mental health disorder) to a non-clinical sample (a group of children who historically have had no diagnosis of mental health disorders). Crucially, these samples consist of hearing children and adolescents. It is possible that cut-off scores may be different if they were based on a clinical and non-clinical samples of deaf children and adolescents. This is a point made by Belk et al. (2016) in a study focusing on deaf adults. They report that lower cut-off scores need to be used for sign language users based on their clinical sample of deaf adults. If this were found to be the case in the studies reviewed here, then the number of deaf children and adolescents in need of clinical attention would likely be much higher.

4.1.2 Rates of prevalence

In this table, six studies which explicitly cited a prevalence rate are listed. An important point to note is that a general prevalence rate is difficult to determine because studies vary in methodology for the reasons mentioned above. Some of the studies below compare rates of prevalence with widely available norming data, while few use a control group of hearing children/adolescents.

Author, year	Number of children	Assessment used	Rated by?	Comments on prevalence	Emotion well-being correlated with?
Remine & Brown (2010) Australia	28 deaf children, 38 deaf adolescents	Child Behaviour Checklist (CBCL) and Youth Self Report (YSR)	Parents, teachers and adolescents	15% (rated by parents, CBCL) 11% (YSR)	--
Hintermair (2007) Germany	213 deaf and hard-of-hearing children (4–13 year olds)	Strengths and Difficulties Questionnaire (SDQ)	Parents	36%	Additional disabilities, communicative competence, age
Dammeyer (2009) Denmark	334 deaf and hard-of-hearing children (6–19 year olds)	SDQ	Teachers	37%	Additional disabilities, language ability, gender
van Gent et al. (2007) Netherlands	70 deaf adolescents (13–21 years)	CBCL, Teacher's Report Form (TRF), Semi-Structured	Parents, teachers, and adolescents	28% (CBCL), 32% (TRF)	Low IQ, mode of communication, number of

		Clinical Interview for Children and Adolescents (SCICA)	Expert ratings from two child psychiatrists	49–63% (SCICA)	physical disorders
Cornes et al. (2006) Australia	54 deaf adolescents using Auslan A further 28 deaf adolescents also completed the written YSR	YSR, CBCL, TRF	Parents, teachers, and adolescents	43% (for those using the Auslan version of the YSR.) 21% (for those using the Standard English version of the YSR.)	--
Van Eldik et al. (2004) Netherlands	238 deaf children (4–18 year old)	CBCL	Parents	41%	Communication ability, age, IQ

Table 1: Overview of studies investigating the rate of emotional wellbeing difficulties in deaf children and young people.

As a comparison, published figures from the National Health Service² (NHS) which contains rates of prevalence for mental health disorders in 2017 indicates that 13% of 5–19 year olds had at least one mental disorder. The assessment used in this report provides a more detailed diagnosis of mental health disorders – the Development and Wellbeing Assessment (DAWBA) – in comparison to the broad measures used in the studies listed in Table 1. Higher scores on the measures reported in these studies suggest that prevalence is likely to be higher in the deaf children and adolescent community.

Table 1 demonstrates variation across studies in the prevalence of emotional wellbeing difficulties in deaf children. Remine and Brown (2010) report that 15% of deaf children and adolescents have problems with their mental health. This rate is similar to the 15% reported for the Australian hearing population. This rate is also much lower than the 43% reported by Cornes et al. (2006). Although both rates are based on the YSR, this difference is attributed to communication mode. Remine and Brown’s sample consisted mainly of deaf children who used Spoken English while Cornes et al.’s figure is based on those using Auslan. Cornes et al. also note that, for deaf children in their study who preferred to use spoken English, prevalence rates are much closer to that for the Australian population.

Remine and Brown (2010) speculate that the differences between the two studies may be attributed to language mode, with signers more likely to report mental health problems. They also speculate that attending a special school might be another factor leading to higher rates of prevalence. However, caution is needed here. Cornes et al. (2006) collected limited additional data from their sample (other than reading age and IQ) and they note that the average IQ of their sample is lower than that of the national average. The differences here may well be attributed to some other factor not included in their analysis

Other studies report figures that appear to be much higher than the general population. Both Hintermair (2007) and Dammeyer (2009) report a rate of 36% and 37%. However, these studies did not include deaf children who went to mainstream schools. Therefore, caution is needed here before prevalence rates can be generalised to the wider deaf population.

Table 1 also shows that prevalence rates can vary depending on the type of respondent. In van Gent et al. (2007), ratings based on 70 deaf adolescents aged 13–21 years were collected from teachers, parents, the adolescent themselves, and clinicians. Data was collected from each group using a different measure.

² digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2017/2017

Results displayed prevalence rates of 28% from parents, 32% from teachers, 49–63% from adolescents, and 49% from clinicians. Van Gent et al. (2007) state that the ratings collected from clinicians are likely to be the most reliable estimate of prevalence. Similar findings are reported in other studies not included in Table 1. Stevenson et al. (2017) indicate that deaf adolescents appear to have a higher total difficulties score when compared to the hearing population on the parent-rated SDQ measure alone (no differences were observed when looking at the results from the teacher-rated and self-rated measures).

4.2 What factors lead to issues with development?

The studies listed in Table 1 also provide some factors associated with emotional wellbeing. These factors are discussed here. As before, caution is required when generalising the findings of these studies to the wider population. These studies can also contradict one another. Where conclusions stand in opposition to one another, it is worth referring to the type of measure used to assess emotional wellbeing, the age group under investigation, and the range of factors included in the study. Included in this section are other studies not mentioned in Table 1 which discuss the relationship between factors related to emotional wellbeing or other aspects, such as quality of life, which can affect emotional wellbeing. In general, findings from these studies suggest that it is not deafness itself that can impact emotional wellbeing but a number of related factors.

4.2.1 Language ability

Studies frequently report an association between language and emotional wellbeing. For example, comparisons made between the findings of Remine and Brown (2010) and Cornes et al. (2006) have led to conclusions that language mode (that is, the use of sign language) is associated with a higher rate of prevalence. Similarly, van Gent et al. (2007) find an association between sign language communication and behavioural disorders but not for emotional disorders. They conclude that signing adolescents are more likely to exhibit behavioural disorders. In contrast, Polat (2003) includes mode of communication used at home or at school as factors and reports that total communication used at home is associated with better self-image. Mode of communication at home was not always important for other aspects of emotional well-being (eg social and emotional adjustment) so this was not a consistent finding.

However, other studies suggest that it is not mode of communication that predicts emotional wellbeing difficulties but language ability. Dammeyer (2009) reports an association between lower language ability (whether spoken or signed) and an increased likelihood of emotional wellbeing difficulties. If language ability is high, then a prevalence rate that is closer to the hearing population is likely. Stevenson et al. (2017) report a correlation between lower receptive language ability and an increased likelihood of emotional wellbeing difficulties in deaf adolescents. Netten et al. (2015) report a moderate association between higher spoken vocabulary scores and better social functioning in deaf preschool children. Lower sentence complexity and shorter sentences produced by this group were also moderately related to behavioural problems.³

These differences should serve as a warning when looking at studies which make comparisons against the use of sign language and speech. Broad categorisations concerning communication mode with no reference to language ability are likely to mask the effect of more subtle factors. Cornes et al. (2006) and Remine and Brown (2010) do not assess language ability in their participants. As a result, no attempt can be made to understand their findings with respect to language ability. Additionally, van Gent et al. (2007) suggest that deaf adolescents with more externalising behaviour may be more likely to be referred to special schools where sign language is the preferred mode of communication. A subsequent association

³ It is very difficult to determine whether these measures reported in Netten et al. (2015) focus on sign or speech. Parents were asked to report the degree of complexity of sentence structure that their child produced regardless of mode. Sentence complexity is then represented as a single score. It is also not clear whether specific tests were used that have been adapted for sign language.

between sign language and the greater prevalence of emotional wellbeing difficulties in this group may then reflect this supposed tendency.

Studies, however, do not always find an association between language ability and emotional wellbeing difficulties. Laugen et al. (2016) find no association between receptive language ability and emotional wellbeing in preschool children (4–5 year olds) with mild to severe hearing loss. This suggests that good language ability at an early age is not enough to counter the risk of developing emotional wellbeing difficulties.

4.2.2 Communication broadly determined

As opposed to looking at language ability, other studies look at communication more broadly. For example, while some tests may assess a specific language feature such as sentence length or knowledge of vocabulary, others may look at the child's ability to tell their parents about something on their mind or their ability to understand things that are explained to them. This type of measure was used in Hintermair (2007) to investigate whether higher communicative competence was associated with scores obtained from the SDQ. Hintermair (2007) reported moderate correlations on the subscales of the SDQ between poor communicative competence and emotional wellbeing difficulties. A similar approach was used in Van Eldik et al. (2004) who report a weak relationship between emotional wellbeing difficulties and poor parent-child communication.

Wallis et al. (2004) explore whether healthier emotional wellbeing scores (using the YSR) in adolescence can be attributed to a communication mode match between mother and child. 57 deaf adolescents of hearing parents were divided into three groups. In the first group the mother and child both used a spoken language. In the second group, the mother and the child both used a sign language. In the third group, the mother used a spoken language and the child used a sign language. In the third group, the child began using sign language in adolescence (compared to the second group where the child used sign language in both childhood and adolescence). Those in the third group reported higher scores on the YSR when compared to the first two groups. This suggests that a communication match between parent and child is important for wellbeing. Caution is needed since this is a retrospective study. It is not possible to assess the quality of language input from a young age so further study is needed.

Calderon (2000) reports that maternal communication skills were the strongest predictor for good language ability along with the child's hearing loss. Mothers who had better communication skills with their children had children with better language and reading ability. They also had reported fewer problems with behaviour. There was also a weak relationship between maternal communication and socioeconomic status. It is assumed that mothers with higher socioeconomic status may have better access to resources which facilitate good communication (eg private sign language classes, better technology).

The importance of good parent-child communication is also highlighted in Polat (2003) which reports that deaf adolescents of deaf parents were more likely to be better adjusted than deaf children of hearing parents. Polat (2003) reasons that deaf parents may have better communication patterns at home and may also actively encourage their child's independence. This finding is not always replicated in other studies however. Dammeyer (2009) did not find an association between having deaf parents and emotional wellbeing difficulties. Instead, language ability (whether spoken or signed) was more important.

The above findings suggest that enhancing communicative competence could be a factor in promoting healthy lifestyles. Wallis et al. (2004) suggest that it is important to encourage parents to become proficient signers, particularly when their child is also likely to use a sign language to communicate. They also suggest that it is important to identify as early as possible those who are likely to succeed with sign language to ensure appropriate adjustments are made.

4.2.3 Additional disabilities

Across the papers reviewed, emotional wellbeing difficulties in deaf children and adolescents were consistently associated with having an additional disability. Polat (2003) reports an association between higher emotional wellbeing scores and additional disabilities. Hintermair (2007) also reports that higher SDQ scores were associated with additional disabilities and that increased abnormal behaviour was observed in this group. Dammeyer (2009) notes that participants with additional disabilities (eg visual, autism, neurological disorders) were three times more likely to report higher SDQ scores. Stevenson et al. (2017) reported that deaf adolescents with additional disabilities (eg cerebral palsy, learning disabilities) were more likely to have higher levels of emotional wellbeing difficulties (whether rated by the parent or teacher).

Edwards et al. (2012) report that quality of life in deaf children with additional needs (as rated by parents) is poorer when compared to deaf children without additional needs. Communication, independence, emotional wellbeing and acceptance by peers were also worse in children with additional needs.

Some of the reported conditions included in these studies are likely to have an effect on mental health. For example, Hindley (2005) explains that central nervous system disorders such as cerebral palsy or epilepsy present a higher risk of mental health problems and deaf children are at a greater risk of these central nervous system disorders than hearing children. Careful evaluation of additional disabilities and effective interventions therefore plays a crucial role in ensuring these children's wellbeing.

4.2.4 Schools

The type of school a child attends may also affect emotional wellbeing. Keilmann et al. (2007) suggest that the frequency of emotional wellbeing difficulties is lower in children in mainstream settings when compared to special schools. Children in special schools were less confident and less assertive. They had difficulty making friends and were more depressed. In contrast, Polat (2003) reports a positive association between better emotional wellbeing and residential school settings in Turkey. Polat (2003) suggests that this might be a reflection of the communication policy in residential school settings. In addition, these schools provide opportunities to interact with peers of similar backgrounds. Although deaf children at residential schools might be better adjusted, Polat (2003) cautions that this group may still be vulnerable to emotional wellbeing difficulties in the future once they leave school and find themselves in a different environment with fewer deaf and hard of hearing peers (eg a workplace or university environment).

4.2.5 IQ

Some studies appear to suggest a link between IQ and emotional wellbeing. Van Eldik et al. (2004) report a weak association between lower intelligence and an increased likelihood of social problems, thought problems, and attention problems. Similar findings were reported in van Gent et al. (2007).

4.2.6 Gender

Gender appears to play a role in the prevalence of emotional wellbeing difficulties with some studies predicting more difficulties for boys. Laugen et al. (2016) report an association between preschool boys with mild or severe hearing loss and lower levels of emotional wellbeing. This suggests that preschool boys may have a different experience of their social surroundings when compared to girls. Although no such association was observed amongst girls, Laugen et al. suggest that girls may experience difficulties with emotional wellbeing at a later age. In a study involving older children aged 6–19, Dammeyer (2009) also observes an association between emotional wellbeing difficulties and boys. This finding was regardless of language ability. In other words, boys with good language ability were still more likely to report difficulties with emotional wellbeing. Wolters et al. (2012) also report that boys, in the first year of junior high school in a mainstream setting, had lower levels of wellbeing than girls (regardless of hearing status).

In contrast, some studies suggest that gender is not associated with emotional wellbeing difficulties. Polat (2003) did not find a clear difference between male and female deaf adolescents, and Van Eldik et al. (2004) also report that gender does not predict levels of emotional wellbeing in deaf children aged 4–18 years old.

However, longitudinal studies indicate that emotional wellbeing can change over time. These studies suggest that, rather than considering vulnerable groups, attention should also be paid to vulnerable periods. Wolters et al. (2012) is a Dutch-based study which investigates wellbeing in 98 deaf and hard of hearing adolescents as they move from elementary school to junior high school. Results suggested that wellbeing was not stable when moving from elementary to junior high in comparison to a group of hearing adolescents. In addition, gender and school type interacted. Wellbeing increased (ie got better) for boys in mainstream settings over the transition period and decreased (ie got worse) for girls. In special education schools, emotional wellbeing increased for girls and decreased for boys. Wolters et al. (2012) suggest that this finding reflects changes in social hierarchies at school (which may vary according to school type) and the effects of emerging adolescence.

4.2.7 Age

Findings concerning the effect of age on emotional wellbeing appear to vary across studies. Van Eldik et al. (2004) report that parents reported more issues with anxiety, depression, and social problems amongst deaf adolescents in comparison to younger children. Hintermair (2007) also observed an association between emotional wellbeing and age with parents more likely to report emotional problems and peer problems in older children. Van Eldik et al. (2004) reason that adolescence is likely to be a difficult period for deaf children in comparison to their early years. During adolescence, being accepted by peers in social interactions becomes important and, due to communication difficulties, this can be more of a challenge for deaf adolescents in particular.

Conversely, some studies report better emotional wellbeing scores as a child ages. Polat (2003) reports that teachers rated older children more positively than younger children in the areas of social adjustment, self-image, and emotional adjustment. Stevenson et al. (2017) report on longitudinal data which compares levels of emotional wellbeing at approximately eight years old and again at 19 years old using the SDQ (parent-version). There was no difference between levels of emotional wellbeing overall when comparing childhood with adolescence. However, on specific subscales, there was a significant decline in hyperactivity and a significant increase on the prosocial scale (ie social behaviour improved). The level of emotional wellbeing difficulties in deaf adolescents overall was still higher than that observed in the hearing control group however.

Blom et al. (2014) investigated wellbeing (measured using the Satisfaction with Life and Loneliness Scale) in deaf students at university in the USA and the Netherlands and found that levels of wellbeing amongst this group did not differ from a similar group of hearing students. They suggest that the lack of a difference may be associated with age, with older adolescents being more secure in their relationships than those in early adolescence (although they did not include this group in their study).

In contrast to the above studies, Dammeyer (2009) reports no association between age and emotional wellbeing based on data collected from teachers.

Although these studies tend to differ in their conclusions with respect to age, the use of various respondents and measures (which may focus on different aspects of behaviour) could partly explain their differences.

4.2.8 Age at onset

Polat (2003) suggests that age at onset of deafness is an important predictor of emotional wellbeing. Adolescents who became deaf at a later age were more likely to report emotional wellbeing difficulties.

Although this was a strong effect, the effect of age at onset of deafness were not as strong as other factors such as the presence of additional disabilities and the degree of hearing loss.

4.2.9 Degree of hearing loss

Conclusions are mixed with respect to the effect of hearing loss on emotional wellbeing, although these studies vary in design. Some studies indicate that there is no relationship between the degree of hearing loss and emotional wellbeing in preschool children who are deaf or hard of hearing (Netten et al. 2015) or with mild or severe hearing loss (Laugen et al. 2016). Dammeyer (2009) also did not find an association between degree of hearing loss and emotional wellbeing in deaf children aged 6–19.

In contrast, Polat (2003) reports that a higher degree of hearing loss was associated with emotional wellbeing difficulties in deaf adolescents. This was a stronger finding than the effect of age at onset of deafness. The degree of hearing loss may be an important factor during adolescence when additional social factors (eg interacting with other peer groups, the need for social acceptance) come into play.

Fellinger et al. (2008) note that parents and teachers tend to report more externalising problems with children and adolescents with severe hearing loss than those with moderate or profound hearing loss. They suggest that this may reflect the unique challenges that those with this level of hearing loss may face. For example, children and adolescents in this group may not consider themselves as part of the deaf community or the wider hearing community. This ambiguity may then create additional stress for children and adolescents in this group, as people (who might see them as part of the hearing community) may expect this group to function at a similar level to hearing peers.

4.2.10 Use of cochlear implants/hearing aids

Polat (2003) reports a positive relationship between emotional wellbeing and the use of hearing aids. Students who used hearing aids were found to be better adjusted. Polat highlights the importance of regular assessments to ensure that adolescents are fitted with hearing aids set at the appropriate level. Polat also highlights how negative perceptions regarding the use of hearing aids may lead deaf adolescents to refrain from wearing them.

Few studies have investigated the rate of prevalence in children with cochlear implants. Dammeyer (2009) compares emotional wellbeing in children with and without cochlear implants and finds no group effects with regards to emotional wellbeing. Fellinger et al. (2008) report that children with cochlear implants did not differ from children without cochlear implants in aspects of emotional wellbeing.

Edwards et al. (2012) suggest that cochlear implants may have a positive impact on the quality of life of deaf children with additional needs. They explored quality of life in deaf children with cochlear implants with and without additional needs. While quality of life in children with additional needs was poorer than in children without additional needs overall, parents reported that their child's quality of life had improved regardless.

Loy et al. (2010) report on the quality of life as rated by profoundly deaf children with a cochlear implant between the ages of 8–16. Parents also rated their child's quality of life and responses were compared to a group of hearing peers. Some differences were observed. Younger deaf children scored their family domain (eg whether they got along with their parents in the past week) lower than hearing peers, and teenage cochlear implant users scored the school domain (eg if they found school activities such as homework easy in the past week) lower than their parents. Earlier implantation and longer use of a cochlear implant resulted in a higher quality of life score. Younger cochlear implant users also rated quality of life more positively than older users. This difference was attributed to the additional social challenges that occur with adolescence.

4.3 Summary

The factors listed in this section indicate that emotional wellbeing difficulties are not directly caused by deafness itself but by a range of factors. These factors may be related to deafness (eg language ability, age of detection) but they may also be external to deafness as well (eg age and gender). In addition, these studies indicate that factors which impact on emotional wellbeing are likely to vary for each child. Mental health professionals will need to consider this variation when presented with cases involving deaf children and adolescents.

5 Emotional wellbeing and deaf children and adolescents: interventions

What interventions, if any, have been found to be effective in preventing emotional difficulties from arising? What interventions, if any, have been found to be effective in supporting deaf children or young people experiencing emotional wellbeing difficulties?

5.1 Early intervention

It is suggested that early intervention plays an important role in preventing emotional wellbeing difficulties. Laugen et al. (2016) describe how the early detection of hearing loss predicted better emotional wellbeing in children with mild hearing loss. Stevenson et al. (2017) suggest that there may be a link between emotional wellbeing difficulties and the Universal Neonatal Hearing Screen (UNHS) in the United Kingdom. Those born during the UNHS period report lower scores on the SDQ in childhood and adolescence. However, this relationship appears to be mediated by language ability. That is, those in the early intervention group had higher scores on language ability which is also associated with better emotional wellbeing. Calderon (2000) also notes that deaf children who used a higher number of additional services were also found to have entered early intervention programmes late (after 24 months with some as late as 30 months). Calderon (2000) suggests that the two findings are related since children who miss out on early intervention are likely to have poorer outcomes.

In contrast, Netten et al. (2015) report no relationship between age of detection (as well as age of amplification) on emotional wellbeing in their study of deaf preschool children, although they state that at the time of data collection (2003–2005), the early detection programme was just in its implementation phase.

5.2 Social skills

Many studies in this review indicate a relationship between social skills and emotional wellbeing. Social skills (or social competence) indicates the ability to interact effectively with others, interpret their behaviour in different settings, adjust one's own behaviour appropriately, and express one's emotions suitably. These skills are essential for the development and maintenance of long-term relationships which, in turn, leads to good emotional wellbeing. However, the ability to do this may be more of a challenge for deaf children and young people. For example, Hindley (2005) describes how deaf children are vulnerable to delays in metacognitive skills such as Theory of Mind. These delays are because they may have limited opportunities to explore other people's thoughts and feelings in interaction. Due to communication barriers, deaf children frequently miss out on these opportunities. This, in turn, has an impact on the development of social skills. Promoting social skills may then serve as an effective intervention strategy for increasing levels of wellbeing.

Some studies, however, suggest there is no difference between deaf and hearing peers in the development of social skills. For example, Andersson et al. (2000) discuss social competence and behavioural problems in 57 Swedish deaf children aged 7–12 years. Parents and teachers were asked to rate social competence (eg a child's capacity to be generous towards peers or avoid conflict) and social initiative (eg initiates and leads activities with peers) as well as the extent to which the child in question exhibited externalising, internalising and concentration problems. Results suggested minor differences when compared to hearing

children. Deaf children showed slightly less social initiative and there was no relationship between social functioning, hearing status and school placement (mainstream vs. special classes). Andersson et al. (2000) note that their sample consisted of families from higher socioeconomic backgrounds. Since these families tend to have better access to resources, this may account for the lack of a difference between deaf and hearing children.

In the following sections, studies which focus on the relationship between social skills and emotional wellbeing and the factors that mediate this relationship are described. These studies highlight how an understanding of how social skills are affected requires careful consideration of other factors such as language ability and the level of hearing loss. As with Table 1, similar issues can be raised regarding the methodology used in these studies. That is, measures used to assess emotional wellbeing and social skills vary across studies and these measures collect ratings from different groups of respondents. These studies also focus on different groups of deaf children and young people, so caution is required before generalising a study's findings.

5.2.1 Language/communication ability and social skills

Hoffman et al. (2014) describe how language ability is related to social skills development in preschool children. Hoffman et al. (2014) looked at the social skills (as rated by teachers) of 74 deaf children in relation to language ability. Results indicated that deaf children with lower language ability displayed lower levels of social skills. This study highlights that delays in social skills developments can begin in early childhood and that those with low language ability are at risk.

This relationship between language ability and social skills was also reported in Meinzen-Derr et al. (2014). However, this was also dependent on non-verbal ability. That is, deaf children between the ages of 3–6 with lower language ability which did not match their (higher) IQ level reported lower functional skills (eg the ability to communicate and interact effectively with others or to do daily tasks independently). Meinzen-Derr et al. (2014) suggest that it is important to identify when children are not performing at the expected language level with respect to their IQ so that appropriate interventions can be taken to improve language ability.

Tasker et al. (2010) study focuses on the importance of joint attention when communicating with a deaf child. Joint attention refers to moments where two or more participants focus on the same referent during a conversation. 26 hearing mothers with deaf children were observed interacting with their child and were compared to a group of hearing mothers with hearing children. They report that children who engaged in more attention episodes were also rated as showing behaviour that was expressive and cooperative. Tasker et al. (2010) stress that it is the quantity and quality of joint attention that is important (eg when joint attention is initiated and then maintained across a sequence of sentences between two participants) rather than just the successful initiation of joint attention.

Kouwenberg et al. (2012) report that deaf adolescents in the special schools were more likely to be victimised than deaf adolescents in mainstream schools. They suggest that deaf adolescents in special schools have lower levels of language competence which leads to poor peer relationship quality. Parents can play a role in preventing children from being victimised, however, Kouwenberg et al. (2012) reported less victimisation in adolescents whose parents were sensitive to their needs and expressed interest in them. They also found a positive correlation between communication and parental sensitivity. Adolescents with parents who were more sensitive, and encouraged them to be more resilient, experienced less victimisation.

5.2.2 Degree of hearing loss and social skills

Other studies have highlighted a relationship between degree of hearing loss and social skills. Laugen et al. (2017) describe how children with mild hearing loss have lower levels of social skills in comparison to children with moderate and severe hearing loss. They suggest that children with mild hearing loss are more likely to be compared to hearing children than those with more profound levels of deafness. The challenge of being able to speak, listen, and function at a similar level to hearing peers may then have effect on their emotional wellbeing. As a result, Laugen et al. argue that early intervention is just as crucial for children with mild hearing loss.

5.2.3 Cochlear implants and social skills

There is some evidence to suggest that the use of cochlear implants can support the development of social skills. Ketelaar et al. (2013) report on social skills and empathy in 61 preschool children with cochlear implants. Based on ratings from parents, deaf children with cochlear implants did not differ from hearing peers in emotional and social functioning. Ketelaar et al. (2013) suggest that early implantation combined with counselling is also responsible for this positive outcome. The authors caution against assuming that this finding will continue with age. It is possible that, as hearing peers become skilled in socialising with others, a gap in social skills ability between deaf and hearing children may appear.

Martin et al. (2011) investigate social skills in deaf children (approximately five years old) following cochlear implantation and observed no difference between deaf and hearing children in how they interacted with peers (e.g. sharing and collaborative play). They also noted that children who had their implant for longer tended to engage in longer periods of interactive and collaborative play.

Bat-Chava et al. (2005) examine the relationship between communication and socialisation in 41 deaf children with cochlear implants and hearing aids at two points in time. Parents first rated their child when they were 3 years old (on average, range 1–7 years) and again when they were 10 years old (on average, range 7–13 years). Children with cochlear implants made significant progress over time, particularly with respect to communication. However, both children with hearing aids and cochlear implants demonstrated age-appropriate developments in behaviour (eg daily living skills, socialisation, communication) after several years of use. Duration was also important for children with less severe hearing loss. Those who had their implant for a shorter period of time made smaller gains than those who had their implant for a longer period. These findings indicate that the use of a cochlear implant for a longer period of time can have a positive effect on a deaf child's ability to socialise with hearing peers.

Interestingly, Bat-Chava et al. (2005) note that improvements in socialisation seem to occur after improvements in communication skills. Better social skills may then be related to better communication skills. The authors suggest that practitioners focus their efforts on improving communication in order to encourage young people to interact better with hearing peers.

Other studies have reported mixed results with regards to the relationship between communication skills and the quality of peer relationships in children with cochlear implants. Bat-Chava et al. (2014) collected data from the parents of 19 implanted children (between the ages of 6–10) at two points in time. Oral communication and social functioning were assessed by a researcher reviewing the interview transcripts rather than being directly assessed. Results indicated a positive relationship between oral communication skills and the quality of peer relationships for half of the children in their study. For some children, the quality of peer relationships improved despite a lack of improvement in oral communication skills. For others, the quality of peer relationship got worse despite improvements in oral communication skills. The authors suggest that other factors such as self-confidence and peer acceptance may play a role. For example, parents reported that progress often relies on the child being accepted by hearing peers in the first place and that ongoing negative experiences will have a long-term effect on the child's self-esteem and confidence. Bat-Chava et al. (2014) suggest that deaf children need to be supported in early

adolescence in building self-esteem. They suggest that mainstream schools have a part to play in this by promoting inclusion and equal membership in the school environment.

5.2.4 School environment and social skills

The school environment can play an important role in the development of social skills although steps need to be taken by professionals to facilitate interaction within the school. Antia et al. (2011) investigate how deaf students in general education classes are rated by teachers and peers on aspects of socialisation and communication over time. They observed no differences between deaf and hearing children in social skills ratings and noted that deaf children did not show a decrease in social skills or an increase in behavioural problems as the study progressed. However, Antia et al. (2011) identified good communication practices in the classroom, as well as participation in school and community activities, as two important factors which have a positive effect on how deaf students are rated. This was more important than hearing loss itself. The authors advise teachers to be mindful of how classrooms are organised to facilitate communication (eg changing physical aspects to reduce background noise) and highlight the importance of including deaf children in extracurricular activities.

The relationship a child has with its peers and teachers is also associated with its emotional wellbeing. Wolters et al. (2012) investigate the predictive effects of peer acceptance, popularity, and teachers' support on deaf children's wellbeing in their final year of elementary school and in the first year of secondary school (junior high school in the Netherlands). They found that a positive relationship with the teacher is associated with good wellbeing in elementary school. This was regardless of whether the child was in mainstream or secondary school. Peer relationships were also important in mainstream schools although the relationship with the teacher was strongest predictor.

However, in the first year of secondary school, the relationship with the teacher becomes less important for children in mainstream settings. Instead, peer relationships (ie an increase in acceptance and popularity) become more important. For children in special education schools, the relationship with the teacher continues to predict emotional wellbeing. Wolters et al. (2012) attribute this difference to the size of classes. Typically, mainstream schools consist of larger classes and, in such environments, the teacher may be less important. In special education schools, class sizes are much smaller. As mentioned earlier, changes in importance may also reflect changes in social hierarchies at school and the effect of emerging adolescence.

5.2.5 Summary

In this section, challenges that deaf children and adolescents face in developing social skills have been outlined. The development of good social skills interacts with other factors such as language ability, the use of hearing aid technology, the school environment, and the degree of hearing loss.

5.3 **Internet and socialisation**

Using the internet to socialise with others online is considered to have a positive impact on wellbeing since challenges associated with face-to-face communication are less likely to be present.

Blom et al. (2014) compare the quality of friendships online and offline and its relationship with emotional wellbeing in 113 deaf and hard of hearing students in the USA and the Netherlands. Interestingly, deaf participants were not found to have lower friendship qualities or lower levels of wellbeing when compared with their hearing peers. However, they found that a higher quality of mixed friendships (those that took place both online and offline) were associated with better wellbeing (feeling less lonely and having more life satisfaction). They argue that the results indicate that deaf students can benefit from computer use with friends (even with those they know offline) since it may act as a form of social compensation.

Similar findings are reported by Barak and Sadovsky (2008) in their study of internet use in 114 deaf adolescents. They report that deaf adolescents were more motivated to use and did actually use the internet more often than hearing adolescents. They also found an association between frequency of use and wellbeing. Deaf adolescents who used the internet more often reported similar levels of wellbeing to hearing adolescents (regardless of how often hearing adolescents used the internet). Based on their findings, they suggest that deaf adolescents who report low levels of emotional wellbeing and who do not use the internet could be encouraged to do so.

5.4 Self-esteem and identity

Positive self-esteem and a sense of identity are linked to high levels of emotional wellbeing. However, this can be more of a challenge for deaf children and young people as this group must also confront challenges associated with their hearing loss and its effect on communication and peer relationships. As a consequence, deaf children and young children may not have a good understanding of the rules of group communication, which can make them hesitant to interact with others. Deafness may also be negatively perceived by their peers. These factors may then have a negative impact on self-esteem and identity.

These challenges can begin from a young age. Keilmann et al. (2007) investigate psychological and physical wellbeing in 131 deaf children in mainstream school aged 6–11 years old. Children responded to statements such as 'I am afraid of the dark' or 'many people like me' and were asked to rate how much these statements applied to them. Results indicated that children in special schools viewed themselves as less favourable when compared to children in mainstream schools. They were less confident, less assertive, found it difficult to make friends, and were more anxious and sad. There was an association between hearing loss and self-confidence in children attending mainstream schools: the more severe the hearing loss, the better their self-confidence. However, this group still reported lower levels of emotional wellbeing as they got older. Kelimann et al. (2007) suggest that this may be related to language ability. Children in special schools did worse on language assessments when compared to children in mainstream schools. The fact that deaf children in mainstream schools showed a decrease in self-confidence as they got older may reflect additional challenges that occur with adolescence which are made worse by disability.

Jambor and Elliott (2005) identify three factors linked to high self-esteem in 78 deaf college students. Firstly, those who identified with the deaf population were found to have higher self-esteem. Secondly, severity of hearing loss was also important, those with greater hearing loss reported higher self-esteem. Thirdly, possessing bicultural skills was also important. Deaf students who were able to interact with both the deaf community and with hearing people were found to have higher self-esteem. The authors suggest that encouraging deaf individuals to develop relationships within society in general can be positive if they maintain their ties with the deaf community for emotional and social support. They suggest that schools may be a good opportunity to teach positive behaviour within deaf and hearing social circles. With regards to severity of hearing loss, Jambor and Elliot (2005) suggest that those with milder forms of hearing loss may be less likely to identify with deaf people or may hide their deafness from their hearing peers.

Israelite et al. (2002) described challenges faced by seven hard-of-hearing adolescents at school in relation to their identities. These adolescents had also attended special classes for hard-of-hearing adolescents during elementary school. Israelite et al. (2002) were specifically interested in hard-of-hearing adolescents since some assume that they do not identify as a minority group and do not form a recognisable community. However, their data indicated that these adolescents identified as hard-of-hearing and positioned themselves as different from culturally deaf individuals on the one hand and hearing people on the other.

The adolescents in Israelite et al. (2002) also emphasised the important role that teachers and their hard-of-hearing peers played in the development of their self-esteem and identity. They described how the supportive environment of the special classes they were enrolled in strengthened their self-acceptance and

their sense of community. Israelite et al. advise schools to bear this in mind so that they can provide class release time for hard-of-hearing peers to interact with one another and with their specialist teachers.

In contrast to special education classes, mainstream classes were considered to be isolating and unsupportive since teachers were not prepared for classes with hard-of-hearing students. Israelite et al. (2002) suggest strategies (such as collaborative group activities) which these teachers can adopt in the classroom to encourage more meaningful interaction amongst peers and teachers. They also suggest that hard-of-hearing peers need to be encouraged to connect with other hard-of-hearing individuals for social support and validation (even if they are integrated into a hearing social circle). These findings and suggestions demonstrate how identity can be formed by (and affected by) interactions at schools which provide students with the space to explore the rules of socialisation.

However, identifying as hard-of-hearing may have negative consequences. Kent (2003) investigated the relationship between identity and wellbeing in 52 mainstream hard-of-hearing students (between the ages of 11-15). They noted that 56% of hard-of-hearing students identified as having a disability. Those that identified as disabled were also more likely to report feeling lonely or being bullied. Kent (2003) suggest that there is a risk associated with identifying as disabled because of its perceived negative stigma within society. They conclude that more needs to be done to educate teachers and students on deafness in order to challenge these negative perceptions.

Studies in this section have demonstrated how deaf children and young people may report lower levels of self-esteem which, in turn, may affect their wellbeing. However, there is a lack of evidence-based interventions which describe how families and schools can assist in the development and maintenance of self-esteem and identity. Netten et al. (2015) also highlight the need for longitudinal research studies in particular to identify effective practices. Interventions targeting self-esteem may possible have an effect on emotional wellbeing.

5.5 Conclusion

This section has referred to a number of challenges that deaf children and young people face with respect to their mental health. Returning to the questions put forth at the beginning of the section:

What does recent research say on the prevalence or likelihood of any emotional wellbeing difficulties among deaf children or young people? Is it possible to identify a 'range' of prevalence estimates on which there may be a reasonable consensus?

- Estimates for prevalence or likelihood of emotional wellbeing difficulties in deaf children or young people varies across studies. Rates can be as low as 11% or as high as 63%.
- It is not possible to identify a range of estimates on which there might be a reasonable consensus since studies vary in their methodological approaches (eg there is variation in the groups that they assess, the assessment used, and the types of respondents involved).
- Many studies use broad assessments of wellbeing which do not provide a diagnosis of a specific mental disorder. Further research of the prevalence rates in this area is needed.
- Some studies do show a higher rate of emotional wellbeing difficulties for deaf children and young people. Van Gent et al. (2007) report a rate of 63% based on expert ratings from child psychiatrists.

Does research provide any insight into when such difficulties are likely to occur (for example, at points of transition in a young person's life) and if there are particular vulnerabilities or 'trigger' points? Does research tell us anything about the extent to which any emotional wellbeing issues are linked to a child's deafness or are 'exacerbated' by their deafness?

- Emotional wellbeing difficulties were consistently associated with having an additional disability.

- Many studies report a relationship between good language ability and fewer difficulties with emotional wellbeing. This is regardless of whether the language in question is spoken or signed.
- Some studies assess communication ability (eg the ability to tell parents that something is on their mind). Good communication ability was also associated with fewer emotional wellbeing difficulties.
- Other factors which were important (although not to the same extent as additional disability and language ability) were school types, IQ, gender, age, onset and degree of hearing loss, use of cochlear implants and hearing aids. Conclusions regarding these factors can sometimes be inconsistent. This is likely to be due to methodological differences.
 - Findings regarding schools were inconsistent. Some studies reported better emotional wellbeing in special schools and some reported the opposite.
 - Lower intelligence was linked to increased emotional wellbeing difficulties.
 - Studies tend to indicate more emotional wellbeing difficulties for boys although some studies appear to contradict this. One longitudinal study (Wolters et al. 2012) showed that emotional wellbeing can vary in different ways for each gender when moving from primary to secondary school.
 - Findings concerning age are inconsistent. Some studies report that the prevalence of emotional wellbeing difficulties increases with age and some studies report the opposite.
 - Age at onset of deafness was a minor factor in one study with those who became deaf at a later age showing more emotional wellbeing difficulties.
 - Degree of hearing loss was also an inconsistent factor. Some studies reported that those with milder hearing loss were more likely to report problems with emotional wellbeing.
 - The use of hearing aids and cochlear implants were linked to better emotional wellbeing. Earlier implantation and longer use of a cochlear implant were also associated with better outcomes.
- The factors listed above often interacted with one another and are likely to vary from child to child.
- Nearly all the studies included in this section are cross-sectional. More longitudinal studies are needed for a more accurate picture of how these factors affect emotional wellbeing over time.
- While studies have identified a number of factors that are linked to emotional wellbeing, there is often insufficient evidence (beyond reasoning put forth in discussions) as to why these factors may be important.

What interventions, if any, have been found to be effective in preventing emotional difficulties from arising or supporting deaf children when experiencing emotional wellbeing difficulties?

- Most of the studies in this section have focused on identifying prevalence. Few studies, if any, have concentrated on the effectiveness of different types of interventions.
- Early intervention plays an important role in preventing emotional wellbeing difficulties.
- Good social skills are essential for the development and maintenance of long-term relationships which can, in turn, promote good emotional wellbeing. The development of good social skills appears to follow the development of good language and communication ability.
- The internet can function as an effective tool for socialisation. Deaf young adults who used the internet more often reported higher levels of emotional wellbeing.
- Positive self-esteem and a sense of identity are linked to better emotional wellbeing. Factors which predict better self-esteem include identifying with the deaf community, those with greater hearing loss, and those with bicultural skills (the ability to interact with the deaf and hearing community).
- Hard-of-hearing adolescents can find value in interacting with a hard-of-hearing community for emotional and social support.

As mentioned above, there are few studies which suggest interventions aimed at improving and supporting emotional wellbeing. Calderon and Greenberg (2012) report that teacher training programmes in deaf education do not focus enough on aspects which are related to emotional wellbeing (eg cognitive, personality, and social development) and that most teachers are not aware of techniques which facilitate

social emotional development. They suggest the introduction of preventive intervention programmes in the early years (teaching social cognitive abilities such as role-taking, how to interpret emotions, social problem-solving) and during adolescence (focusing on interpersonal difficulties and peer pressure) to address the unique challenges that deaf children and adolescents face during these periods. They also suggest a need for curriculum models aimed at promoting good emotional wellbeing for deaf adolescents and young adults which support them across transitions (eg from college to work). This would involve coordination between vocational rehabilitation counsellors and school personnel to facilitate the transition between school and work. The effectiveness of these measures would also need to be tested.

At the time of writing, Calderon and Greenberg (2012) do note several advancements that will have an effect on emotional wellbeing, but the impact of these advancements is not yet clear. These advancements include universal newborn screening programmes, early interventions, improvements in technology and innovative educational programmes (eg bicultural and bilingual curriculums).

6 Emotional wellbeing in parents

With respect to the emotional wellbeing in parents of deaf children, this literature review sought to answer the following questions:

- What does research say, if anything, on the prevalence or likelihood of any emotional wellbeing difficulties among parents of deaf children?
- What is the nature of those difficulties? In particular:
 - Does research provide any insight into whether there are particular factors (eg level of hearing loss, additional needs or socio-economic status) behind a higher prevalence?
 - In addition, does research provide any insight into when such difficulties are likely to occur and/or the duration of any such difficulties?
- What does the research say, if anything, on the impact of any emotional wellbeing difficulties on, for example, parenting behaviour or on the deaf child's own wellbeing?
- What support or early interventions, if any, have been found to be effective in preventing emotional difficulties from arising?
- What interventions, if any, have been found to be effective in supporting parents of deaf and/or disabled children experiencing emotional wellbeing difficulties?

6.1 Prevalence of emotional wellbeing in parents of deaf children

There is very little research investigating the prevalence of emotional wellbeing difficulties amongst parents of deaf children. Few studies make specific reference to the term 'emotional wellbeing' when discussing parents' mental health. Instead, parental emotional wellbeing is often discussed in the context of being stressed and the factors that lead to more stress. Higher levels of stress are believed to be a symptom of depression and anxiety.

Some studies compare levels of stress in parents of deaf children with parents of hearing children. Surprisingly, Pipp-Segel et al. (2002), based on a dataset of 184 hearing mothers of deaf children using a short form of the Parental Stress Index (PSI), finds that mothers of deaf children have lower levels of stress when compared to normative data. Similar findings were reported in other studies which also use the PSI (e.g. Åsberg, Vogel, and Bowers 2008).

The studies above all investigate levels of stress at a single point in time. In one study however, Lederberg and Goldbach (2002) assesses parental stress using the PSI in 23 hearing mother of deaf children across three periods: when their child was 22 months, three years, and four years old. Higher levels of stress were observed for some aspects at 22 months. Mothers of deaf children reported concern about their child's ability to communicate with others and concerns about their future. They also found that at three

and four years old, mothers of deaf children did not differ from mothers of hearing children in levels of general parenting stress. This suggests that parents are more stressed when the child is at an early age.

However, the measure used in the above studies does not take into account specific areas which may be unique to parents of deaf children. This is addressed in a later study by Quittner et al. (2010) which compares levels of stress in 181 hearing parents of deaf children with 92 hearing parents of hearing children. They found no differences between the two groups when assessing general parenting stress (eg stress over everyday finances or discipline) using the PSI. Quittner et al. (2010) also used a second measure known as the Family Stress Scale which takes into account general and context-specific areas of stress. They found higher levels of stress were reported for contexts that were specifically associated with the challenges of raising a deaf child. These challenges were issues with language and communication, managing hearing aids, and concerns about education. These findings emphasise the importance of the measure used to assess levels of stress in hearing parents.

6.2 Factors associated with increased stress in parents of deaf children

Studies mentioned in the previous section do not only investigate levels of stress in parents but also attempt to provide insight into the factors which are associated with higher levels of stress. Two main factors are identified here: language and communication ability, and children with additional disabilities.

6.2.1 Language and communication ability

One factor frequently identified across studies is language and communication ability. For example, Quittner et al. (2010) noted that language delays and child behaviour problems were also associated with higher levels of parental stress. Hintermair (2006) reports that parents of deaf children with low communication ability were more likely to be stressed.

The authors of these studies reason that children with delayed language ability may have difficulty communicating their needs to their parents as well as adjusting their emotions and behaviour accordingly. They may also have problems understanding their parents and any instructions they receive from them. Poor communication between parent and child may then lead to increased stress for both the parent and the child.

Increased stress in parents may be a factor in the prevalence of emotional wellbeing difficulties in deaf children. Topol et al. (2011) find an association between maternal stress and child language ability on behavioural outcomes in young deaf children (18–24 months). They found a higher incidence of emotional wellbeing difficulties (specifically, more withdrawn and internalising behaviour) in deaf children and that this was correlated with low language ability. They also found that higher levels of emotional wellbeing difficulties were associated with higher levels of stress in mothers. As a result, Topol et al. (2011) suggest that measures need to be implemented which lower maternal stress in order to minimise its effects on the child.

6.2.2 Additional disabilities

Studies consistently show that parents of deaf children with additional disabilities are more likely to be stressed (Hintermair 2006, Pipp-Siegal et al. 2002). As reported in Section 4.2.3, deaf children with additional disabilities are also more likely to report higher levels of emotional wellbeing difficulties. The extra challenges of coping and managing a deaf child with additional disabilities will, as expected, cause higher levels of parental stress.

Whicker et al. (2019) review nine research studies exploring challenges for parents when caring for deaf children with additional disabilities (eg Autism Spectrum Disorder, visual impairments) and discuss their findings within three domains: family, professional and child domains. Issues with the family domain referred to decision-making, coping with reactions from extended families, lack of funding, and the

emotional and physical difficulty that comes with caring for children who are deaf with additional disabilities. Findings regarding the professional domain covered the lack of inter-professional collaboration, attitudes held by professionals, as well as educational placement and school support, while issues concerning the child domain were related to communication and behaviour.

Similar findings are raised in Jamieson et al. (2011). Parents with deaf children with additional needs also expressed difficulties with finding appropriate specialist care which may not be in existence. They also pointed to challenges in obtaining a diagnosis for some disabilities because the symptoms may be associated with deafness. Following diagnosis, a lack of joined-up care means that parents find themselves having to liaise with many professionals which may be a challenge to manage.

6.2.3 Deaf parents

Hintermair (2006) also observes that deaf mothers in particular were less likely to show elevated levels of stress when interacting with their child in comparison to hearing mothers of deaf children. However, deaf parents in general do not show lower levels of stress when compared to hearing parents of hearing children.

6.3 Interventions for parents

The studies reviewed in this section all made several recommendations for interventions with the intention of improving parental wellbeing. For example, based on their findings regarding communication ability and parental stress, Quittner et al. (2010) suggest that improving communication between parent and child should be a priority for early intervention. While some studies attributed positive outcomes to existing practices (eg early intervention programmes), there were no studies which directly assessed the effectiveness of targeted intervention practices.

6.3.1 Support networks

Many studies point to the value of social support to help parents with emotional wellbeing. For example, Hintermair (2006) observed that parents with access to these types of resources (eg social networks) tend to exhibit lower levels of stress. Similar findings are reported by Lederberg and Goldbach (2002). However, Lederberg and Goldbach (2002) note that the support networks of hearing parents with deaf children may differ from hearing mothers of hearing children. In their study, mothers of deaf children have larger professional networks and smaller social networks while mothers of hearing children reported having a more general support network. Despite these differences, both groups reported a similar level of satisfaction with social support.

In addition to the above, Hintermair (2006) also observed that parents with personal characteristics such as resilience tend to exhibit lower levels of stress. The value of these personal resources also needs to be highlighted amongst parents. Taking this into account, Hintermair (2006) advises that a resource-orientated approach in early intervention would assist in reducing stress. This would empower parents to feel capable of addressing their deaf child's needs and encourage them to expand and strengthen their support networks.

6.3.2 Early intervention programmes

Lederberg and Goldbach (2002) suggest their finding of little difference in stress levels between mothers of deaf and hearing children can be linked to the success of early intervention programmes. Pipp-Siegel et al. (2002) also suggest that lower levels of parental stress that is on par with parents of hearing children can be attributed to an early diagnosis and the provision of good support. Note, however, these studies are nearly 20 years old. The findings in Lederberg and Goldbach's study were collected between 1985–1993. The extent to which their findings may still be relevant today might be questioned.

The importance of early intervention has been emphasised more recently by Calderon and Greenberg (2012). Ensuring parents are involved in comprehensive, early intervention programmes can provide them with the support needed to facilitate the development of important skills in their child (eg appropriate behaviour, good habits).

6.3.3 Communication ability

Studies which have identified a link between language and communication ability and parental stress also suggest a stronger focus on improving parent-child communication (Hintermair, 2006; Quittner et al. 2010; Topol et al. 2011) to address parental stress and, subsequently, prevent emotional wellbeing difficulties in deaf children.

6.3.4 Family-centred approach

Jamieson et al. (2011) advocate a family-centred approach beginning in the early years as effective support for parents. This approach encourages professionals to empower parents so that they are in a position to make informed choices with regards to the child's development and education. A family-centred approach differs from parental involvement. While the latter refers to the encouragement of behaviours and attitudes (eg being involved in school-based activities), the former focuses on empowering parents to take the lead. This suggestion was made based on the findings of a qualitative study looking at family support needs of 38 families with deaf preadolescents and adolescents (10–18 years) in Canada. Findings from this study were grouped into themes: the need for information, the need for guidance, and the need for more emotional support.

In the first instance, parents indicated a clear need for information, particularly when the child moved into a school environment. Jamieson et al. (2011) observed that parents felt cut off from school and that there was less focus on the family's need for information and support. This was partly attributed to the school's tendency to focus on a child-centred, as opposed to family-centred, approach. Parents also expressed a need to receive information (preferably within a central repository) about updates in technology, their child's rights and the services that were available to them. Parents also desired information on, and assistance with, financial resources. They expressed frustration with trying to find out if funding is available, accessing support, and paying for services for which no funding is available.

Jamieson et al. (2011) also observed a clear need for guidance and support amongst parents. Parenting a deaf child presents challenges that are unique. For instance, interpreting a child's behaviour in the context of their deafness can be problematic. How can a parent tell if their child is ignoring what they have said or whether they genuinely did not hear them? Parents also wanted to know more about the effect of deafness on a child's emotional wellbeing. They understood that deafness could further complicate challenges within adolescence (eg the need for peer acceptance) and remarked that parenting courses tend not to deal with issues made more complex by hearing loss. Parents also expressed an interest in more specialised workshops.

Lastly, parents in Jamieson et al. (2011)'s study also highlighted the need for more emotional support. Parents indicated that they experience grief following their child's diagnosis. 39% of parents indicated they needed emotional support to cope with feelings of stress and anxiety and 34% indicated they would like to meet a counsellor. They also highlighted a lack of awareness from emotional support services. Parents also expressed a need for more support and understanding from their own extended family. Parents also shared that they can re-experience grief from the diagnosis stage during specific transition points (such as moving from early years to school, or changing schools). However, there is a lack of support available to parents to counsel them through these periods in comparison to early years support.

6.3.5 Support for parents of deaf children with additional disabilities

Based on their review, Whicker et al. (2019) suggest that audiologists should consider the impact of additional disabilities on parental burnout and how parents may manage their child's hearing care. They encourage audiologists to screen for symptoms of burnout (e.g. anxiety, depression) so that they can ensure that parents are adequately supported. They also suggest that audiologists need to ask parents how they would like information passed on to other professionals. Even something as simple as coordinating hospital appointments, so that parents don't have to make multiple trips, would help relieve the burden.

6.4 Conclusions

What does research say, if anything, on the prevalence or likelihood of any emotional wellbeing difficulties among parents of deaf children?

- Few studies focus on the prevalence or likelihood of emotional wellbeing difficulties in parents of deaf children.
- Some studies investigate levels of stress in parents of deaf children. These studies also vary in their conclusions with some reporting less stress, equal levels of stress, and more stress when compared to parents of hearing children.
- However, studies which focus specifically on challenges which are unique to raising a deaf child do report higher levels of stress amongst parents of deaf children.
- Most studies focus on maternal stress in particular (although the term 'parental stress' is often used).

Does research provide any insight into whether there are particular factors (eg level of hearing loss, additional needs or socio-economic status) behind a higher prevalence? In addition, does research provide any insight into when such difficulties are likely to occur and/or the duration of any such difficulties?

- Elevated stress levels are associated with language and communication ability. Parents with children who are less able to communicate fluently are more stressed. Poor parent-child communication was also a factor causing increased stress.
- Children with additional disabilities were more likely to have parents who were more stressed.
- Deaf parents of deaf children were less likely to be stressed when compared to hearing parents of deaf children.

What does the research say, if anything, on the impact of any emotional wellbeing difficulties on, for example, parenting behaviour or on the deaf child's own wellbeing?

- There is very little research in this area. However, studies do assume a link between increased parental stress and emotional wellbeing difficulties in children. Some studies have suggested improving parental-child communication to address parental stress. This would then have a positive effect on the child's emotional wellbeing.

What support or early interventions, if any, have been found to be effective in preventing emotional difficulties from arising? What interventions, if any, have been found to be effective in supporting parents of deaf and/or disabled children experiencing emotional wellbeing difficulties?

- Few studies directly assess effective practices aimed at improving or preventing emotional wellbeing.
- One study (Hintermair, 2006) includes social support as a factor influencing parental stress. Parents with access to resources tend to exhibit lower levels of stress. Services need to focus on developing and furthering existing support networks through childhood and adolescence.

- Studies also attribute low levels of stress to the success of early intervention programmes (eg Lederberg and Goldbach, 2002). These early intervention programmes can ensure parents get the support they need with their child's development.
- A family-centred approach beginning in the early years is considered to be good practice. In such an approach, parents are empowered to be in a position to make informed choices regarding their child's development and education.
- In one (Canadian) study, parents indicated a clear need for more information on available resources. They also indicated a need for emotional support, particularly during transition points (eg moving from early years to secondary school).
- Professionals can play a role in providing support to parents. For example, audiologists should be mindful of the impact of additional disabilities on parental stress and make adjustments (eg joining up appointments) to mitigate their effects.

7 References

- Andersson, Gerhard, Erik Olsson, Ann Margret Rydell, and Hans Christian Larser. 2000. "Social Competence and Behavioural Problems in Children with Hearing Impairment." *International Journal of Audiology* 39(2):88–92.
- Antia, Shirin D., Patricia Jones, John Luckner, Kathryn H. Kreimeyer, and Susanne Reed. 2011. "Social Outcomes of Students Who Are Deaf and Hard of Hearing in General Education Classrooms." *Exceptional Children* 77(4):489–504.
- Åsberg, Kia K., Jennifer J. Vogel, and Clint A. Bowers. 2008. "Exploring Correlates and Predictors of Stress in Parents of Children Who Are Deaf: Implications of Perceived Social Support and Mode of Communication." *Journal of Child and Family Studies* 17(4):486–99.
- Barak, Azy, and Yael Sadovsky. 2008. "Internet Use and Personal Empowerment of Hearing-Impaired Adolescents." *Computers in Human Behavior* 24(5):1802–15.
- Bat-Chava, Y., D. Martin, and L. Imperatore. 2014. "Long-Term Improvements in Oral Communication Skills and Quality of Peer Relations in Children with Cochlear Implants: Parental Testimony." *Child: Care, Health and Development* 40(6):870–81.
- Bat-Chava, Yael, Daniela Martin, and Joseph G. Kosciw. 2005. "Longitudinal Improvements in Communication and Socialization of Deaf Children with Cochlear Implants and Hearing Aids: Evidence from Parental Reports." *Journal of Child Psychology and Psychiatry, and Allied Disciplines* 46(12):1287–96.
- Belk, Rachel A., Mark Pilling, Katherine D. Rogers, Karina Lovell, and Alys Young. 2016. "The Theoretical and Practical Determination of Clinical Cut-Offs for the British Sign Language Versions of PHQ-9 and GAD-7." *BMC Psychiatry* 16(1):372.
- Blom, Helen, Marc Marschark, Mathijs P. J. Vervloed, and Harry Knoors. 2014. "Finding Friends Online: Online Activities by Deaf Students and Their Well-Being" edited by B. N. Uchino. *PLoS ONE* 9(2):e88351.
- Calderon, Rosemary. 2000. "Parental Involvement in Deaf Children's Education Programs as a Predictor of Child's Language, Early Reading, and Social-Emotional Development." *Journal of Deaf Studies and Deaf Education* 5(2):140–55.
- Calderon, Rosemary, and Mark T. Greenberg. 2012. "Social and Emotional Development of Deaf Children: Family, School, and Program Effects." in *The Oxford Handbook of Deaf Studies, Language, and Education: Second Edition*. Vol. 1. Oxford University Press.
- Cornes, Andy, Meg J. Rohan, Jemina Napier, and Joseph M. Rey. 2006. "Reading the Signs: Impact of Signed Versus Written Questionnaires on the Prevalence of Psychopathology Among Deaf Adolescents *." *Australian & New Zealand Journal of Psychiatry* 40(8):665–73.
- Dammeyer, Jesper. 2009. "Psychosocial Development in a Danish Population of Children with Cochlear Implants and Deaf and Hard-of-Hearing Children." *Journal of Deaf Studies and Deaf Education* 15(1):50–58.
- Edwards, Lindsey, Tina Hill, and Merle Mahon. 2012. "Quality of Life in Children and Adolescents with Cochlear Implants and Additional Needs." *International Journal of Pediatric Otorhinolaryngology* 76(6):851–57.
- Van Eldik, Theo, Philip D. A. Treffers, Jan W. Veerman, and Frank C. Verhulst. 2004. "Mental Health Problems of Deaf Dutch Children as Indicated by Parents' Responses to the Child Behavior Checklist." *American Annals of the Deaf* 148(5):390–95.

- Fellinger, Johannes, Daniel Holzinger, Heribert Sattel, Manfred Laucht, Eur Child, Adolesc Psychiatry, J Fellinger, Ae D. Holzinger, H Sattel, and M Laucht. 2008. "Mental Health and Quality of Life in Deaf Pupils."
- van Gent, Tiejou, Arnold W. Goedhart, Peter A. Hindley, and Philip D. A. Treffers. 2007. "Prevalence and Correlates of Psychopathology in a Sample of Deaf Adolescents." *Journal of Child Psychology and Psychiatry and Allied Disciplines* 48(9):950–58.
- Hindley, Peter A. 2005. "Mental Health Problems in Deaf Children." *Current Paediatrics* 15(2):114–19.
- Hintermair, Manfred. 2006. "Parental Resources, Parental Stress, and Socioemotional Development of Deaf and Hard of Hearing Children." *Journal of Deaf Studies and Deaf Education* 11(4):493–513.
- Hintermair, Manfred. 2007. "Prevalence of Socioemotional Problems in Deaf and Hard of Hearing Children in Germany." *American Annals of the Deaf* 152(3):320–30.
- Hoffman, Michael F., Alexandra L. Quittner, and Ivette Cejas. 2014. "Comparisons of Social Competence in Young Children with and without Hearing Loss: A Dynamic Systems Framework." *Journal of Deaf Studies and Deaf Education* 20(2):115–24.
- Israelite, Neita, Janet Ower, and Gayle Goldstein. 2002. "Hard-of-Hearing Adolescents and Identity Construction: Influences of School Experiences, Peers, and Teachers." *Journal of Deaf Studies and Deaf Education* 7(2):134–48.
- Jambor, Edina, and Marta Elliott. 2005. "Self-Esteem and Coping Strategies among Deaf Students." *Journal of Deaf Studies and Deaf Education* 10(1):63–81.
- Jamieson, Janet R., Anat Zaidman-Zait, and Brenda Poon. 2011. "Family Support Needs as Perceived by Parents of Preadolescents and Adolescents Who Are Deaf or Hard of Hearing." *Deafness and Education International* 13(3):110–30.
- Keilmann, Annerose, Annette Limberger, and Wolf J. Mann. 2007. "Psychological and Physical Well-Being in Hearing-Impaired Children." *International Journal of Pediatric Otorhinolaryngology* 71(11):1747–52.
- Kent, B. A. 2003. "Identity Issues for Hard-of-Hearing Adolescents Aged 11, 13, and 15 in Mainstream Setting." *Journal of Deaf Studies and Deaf Education* 8(3):315–24.
- Ketelaar, Lizet, Carolien Rieffe, Carin H. Wiefferink, and Johan H. M. Frijns. 2013. "Social Competence and Empathy in Young Children with Cochlear Implants and with Normal Hearing." *Laryngoscope* 123(2):518–23.
- Kouwenberg, Maartje, Carolien Rieffe, Stephanie C. P. M. Theunissen, and Mark de Rooij. 2012. "Peer Victimization Experienced by Children and Adolescents Who Are Deaf or Hard of Hearing." *PLoS ONE* 7(12).
- Laugen, Nina J., Karl H. Jacobsen, Carolien Rieffe, and Lars Wichstrøm. 2016. "Predictors of Psychosocial Outcomes in Hard-of-Hearing Preschool Children." *Journal of Deaf Studies and Deaf Education* 21(3):259–67.
- Laugen, Nina J., Karl H. Jacobsen, Carolien Rieffe, and Lars Wichstrøm. 2017. "Social Skills in Preschool Children with Unilateral and Mild Bilateral Hearing Loss." *Deafness and Education International* 19(2):54–62.
- Lederberg, Amy R., and Traci Golbach. 2002. "Parenting Stress and Social Support in Hearing Mothers of Deaf and Hearing Children: A Longitudinal Study." *Journal of Deaf Studies and Deaf Education* 7(4):330–45.
- Loy, Betty, Andrea D. Warner-Czyz, Liyue Tong, Emily A. Tobey, and Peter S. Roland. 2010. "The Children

Speak: An Examination of the Quality of Life of Pediatric Cochlear Implant Users." *Otolaryngology - Head and Neck Surgery* 142(2):247–53.

Martin, Daniela, Yael Bat-Chava, Anil Lalwani, and Susan B. Waltzman. 2011. "Peer Relationships of Deaf Children with Cochlear Implants: Predictors of Peer Entry and Peer Interaction Success." *Journal of Deaf Studies and Deaf Education* 16(1):108–20.

Meinzen-Derr, Jareen, Susan Wiley, Sandra Grether, Jannel Phillips, Daniel Choo, Julie Hibner, and Holly Barnard. 2014. "Functional Communication of Children Who Are Deaf or Hard-of-Hearing." *Journal of Developmental and Behavioral Pediatrics* 35(3):197–206.

Netten, Anouk P., Carolien Rieffe, Stephanie C. P. M. Theunissen, Wim Soede, Evelien Dirks, Anna M. H. Korver, Saskia Konings, Anne Marie Oudesluys-Murphy, Friedo W. Dekker, and Johan H. M. Frijns. 2015. "Early Identification: Language Skills and Social Functioning in Deaf and Hard of Hearing Preschool Children." *International Journal of Pediatric Otorhinolaryngology* 79(12):2221–26.

Pipp-Siegel, Sandra, Allison L. Sedey, and Christine Yoshinaga-Itano. 2002. "Predictors of Parental Stress in Mothers of Young Children With Hearing Loss." *The Journal of Deaf Studies and Deaf Education* 7(1):1–17.

Polat, F. 2003. "Factors Affecting Psychosocial Adjustment of Deaf Students." *Journal of Deaf Studies and Deaf Education* 8(3):325–39.

Quittner, Alexandra L., David H. Barker, Ivette Cruz, Carolyn Snell, Mary E. Grimley, and Melissa Botteri. 2010. "Parenting Stress Among Parents of Deaf and Hearing Children: Associations with Language Delays and Behavior Problems." *Parenting* 10(2):136–55.

Remine, Maria D., and P. Margaret Brown. 2010. "Comparison of the Prevalence of Mental Health Problems in Deaf and Hearing Children and Adolescents in Australia." *Australian and New Zealand Journal of Psychiatry* 44(4):351–57.

Stevenson, Jim, Hannah Pimperton, Jana Kreppner, Sarah Worsfold, Emmanouela Terlektsi, and Colin Kennedy. 2017. "Emotional and Behaviour Difficulties in Teenagers with Permanent Childhood Hearing Loss." *International Journal of Pediatric Otorhinolaryngology* 101:186–95.

Tasker, Susan L., Matilda Nowakowski, St Joseph', and Healthcare Hamilton. 2010. "Joint Attention and Social Competence in Deaf Children with Cochlear Implants Understanding the Experience and Impact of Homicide on Siblings of Homicide Victims View Project." *Article in Journal of Developmental and Physical Disabilities*.

Theunissen, Stephanie C. P. M., Carolien Rieffe, Anouk P. Netten, Jeroen J. Briaire, Wim Soede, Jan W. Schoones, and Johan H. M. Frijns. 2014. "Psychopathology and Its Risk and Protective Factors in Hearing-Impaired Children and Adolescents a Systematic Review." *JAMA Pediatrics* 168(2):170–77.

Topol, Deborah, Nicole Girard, Lucille St Pierre, Richard Tucker, and Betty Vohr. 2011. "The Effects of Maternal Stress and Child Language Ability on Behavioral Outcomes of Children with Congenital Hearing Loss at 18-24months." *Early Human Development* 87(12):807–11.

Wallis, D. 2004. "Hearing Mothers and Their Deaf Children: The Relationship between Early, Ongoing Mode Match and Subsequent Mental Health Functioning in Adolescence." *Journal of Deaf Studies and Deaf Education* 9(1):2–14.

Whicker, John J., Karen Muñoz, and Lauri H. Nelson. 2019. "Parent Challenges, Perspectives and Experiences Caring for Children Who Are Deaf or Hard-of-Hearing with Other Disabilities: A Comprehensive Review." *International Journal of Audiology* 58(1):5–11.

Wolters, Nina, Harry Knoors, Antonius H. N. Cillessen, and Ludo Verhoeven. 2012. "Impact of Peer and Teacher Relations on Deaf Early Adolescents' Well-Being: Comparisons before and after a Major School Transition." *Journal of Deaf Studies and Deaf Education* 17(4):463–82.