

Social Service Review

Avoiding Linguistic Neglect of Deaf Children

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Abstract:	Deaf children who are not provided with a sign language early in their development are at risk of linguistic deprivation; they may never be fluent in any language and they may have deficits in cognitive activities that rely on a firm foundation in a first language. These children are socially and emotionally isolated. Deafness makes a child vulnerable to abuse, but if deafness is accompanied by linguistic deprivation, the abuse is compounded because the child is less able to report it. Thus linguistic deprivation is itself child maltreatment. Parents rely on professionals as guides in making responsible choices in raising and educating their deaf children. But lack of expertise on language acquisition and over-reliance on access to speech often result in professionals not recommending that the child be taught a sign language or, worse, that the child be denied sign language. We recommend action that those in the social welfare services can implement immediately, to help protect the health of deaf children.
Response to Reviewers:	<p>1. "However, the tone of your argument is more polemical than seems necessary, and than is appropriate for SSR." -- This was the editor's comment -- and it was echoed in Reviewer #3. We have worked to make the tone one of support and of spurring people to action.</p> <p>2. "For SSR to publish your paper, I would want to see the language of your argument better reflect scholarly respect for those other opinions." Again -- this was the editor's comment, and again, Reviewer #3 felt the same discomfort. We combed through carefully. We hope any hint of patronizing and strident remarks is completely gone now. We want to be helpful rather than adversarial. So I hope we achieved that.</p> <p>3. The editor wanted clarity in exactly what it is we are asking social service providers to do -- given what social service providers generally do. We have clarified that we are asking for a more active role in terms of revising the standards for what counts as neglect and in terms of documenting the effects of linguistic neglect that are seen first-hand by social service providers. We lay out a clear explication of how CPS practices can and should change, in order to help families</p>

make choices that protect their children.

4. The editor suggested we look into the laws against corporal punishment. This was a brilliant suggestion. Many organizations contributed to the anti-corporal punishment movement, and some of them were social service providers. They worked to change public opinion by having an information blitz. In the country most studied, Sweden, they were successful. So we suggest that their methods be taken as a model.

5. Reviewer #1 asked: "Is there a solid connection between the call for action and reductions in linguistic deprivation?" we cannot know that. But the move for anti-corporal punishment shows that such a call for action can lead to a reduction of harm. So we make that point clearly.

6. Reviewer #2 suggested we add "child neglect" to the keywords -- which we did.

7. Reviewer #3 mentioned that "Historically, the education and "treatment" of deaf children has been fraught with debates, disagreements..." We had not brought that up. But now we do -- briefly -- to point out that that debate was based largely on cultural concerns and on how far parents' rights go. Our paper is not about cultural concerns or parent rights. It's about responses to what research has shown us about the cognitive health of deaf children who do not have full access to any language. We think this helps a good deal in letting people know the goal is protection of health... and not at all about value of cultures.

I think that's all. We did not ignore anything. We were grateful for such thoughtful comments and we used them to make a more compelling paper that will, we hope, be of greater service now that it is not contentious.

Avoiding Linguistic Neglect of Deaf Children

Abstract: Deaf children who are not provided with a sign language early in their development are at risk of linguistic deprivation; they may never be fluent in any language and they may have deficits in cognitive activities that rely on a firm foundation in a first language. These children are socially and emotionally isolated. Deafness makes a child vulnerable to abuse, but if deafness is accompanied by linguistic deprivation, the abuse is compounded because the child is less able to report it. Thus linguistic deprivation is itself child maltreatment. Parents rely on professionals as guides in making responsible choices in raising and educating their deaf children. But lack of expertise on language acquisition and over-reliance on access to speech often result in professionals not recommending that the child be taught a sign language or, worse, that the child be denied sign language. We recommend action that those in the social welfare services can implement immediately, to help protect the health of deaf children.

Highlights:

- Discussion of research showing deaf children benefit from learning a sign language, whether or not they have a cochlear implant.
- Outline of the importance of recognizing that sign language protects against linguistic deprivation and the resultant cognitive deficits, and protects social communication.
- How to improve social-science-provider practice by getting informed about first language acquisition and the benefits of sign languages; helping families get so informed; connecting families with sign language communities so they can begin their exposure to sign language and visual communication.

Keywords: sign languages, linguistic deprivation, language neglect, deaf children, child neglect, social communication.

1 Introduction

Deaf children (a label used inclusively here to cover children with a wide range of hearing loss, including those who are hard of hearing) have historically been and continue to be at increased risk for maltreatment. While many types of maltreatment of deaf children are documented and actively discussed, the most prevalent type has yet to be recognized by the majority of people who live and/or work with deaf children: linguistic deprivation (also known as language deprivation) due to failure to provide access and effective exposure to a language. New research shows that inadequate access to language is associated with negative health and psychological outcomes. The lack of recognition of this type of maltreatment is significant, since linguistic deprivation results in other types of maltreatment. In this way, then, failure to provide exposure to an accessible language constitutes child neglect. The critical means of avoiding this risk for a deaf child is providing the child with exposure to a sign language.

The issue of how to raise and educate deaf children is not a new one, and it has been fraught with debates that largely concern matters of culture and parental rights – debates grounded in philosophical, political, and sociological concepts. The present paper does not enter into those debates. Instead, the focus is on recent studies of biological harm and its psychosocial effects if a child does not fully access language during the period in which the brain's plasticity is primed for language development.

Not all deaf children who are not taught a sign language wind up with linguistic deprivation and become targets of abuse. Just as not all children who are not wearing a seat belt wind up in an accident and are the victim of injury or death, we agree, as a society, that children (and adults) should wear seat belts to guard against potential harm, and we expect the responsible

adults to ensure the child's use of a seat belt. We conclude in this article that sign language exposure is just as critical an aspect of caring for the deaf child.

Examining the ways in which linguistic deprivation occurs helps to clarify the responsibilities of individuals and institutions to ensure the safety and humane care of deaf children. We discuss here the social and cultural conditions that restrict deaf children's access to language, including beliefs and practices of individuals and institutions that hinder parents' ability to protect their deaf children from harm. We also discuss here the need for all deaf children to learn a sign language. We end with suggestions for policies and practices that can assure protection from harm due to linguistic deprivation.

2 Well-recognized maltreatment –a review of the literature

Considerable recent research documents the prevalence of child maltreatment among deaf people. Schenkel and colleagues (2014) used the English version of the Childhood Trauma Questionnaire to assess 5 types of childhood maltreatment that occurred prior to age 16. The self-reported child maltreatment occurrence for the deaf college sample in the United States (n=104) is as follows: 48% for Emotional Abuse; 44% for Emotional Neglect; 44% for Physical Neglect; 40% for Physical Abuse; and 31% for Sexual Abuse. For emotional and physical abuse, a study in the United Kingdom found that children with "speech and language disorders" were at increased risk of emotional and physical abuse, both associated with psychological disorders, as well as neglect (Spencer et al., 2005). For sexual abuse, a Norwegian study found that deaf females run double the risk of sexual abuse as their hearing peers, while deaf males run triple the risk (Kvam, 2004), and a German prevalence survey study indicates that 52% of deaf women are at high risk for violence, including sexual abuse (BMFSFJ, 2012: 21). In an older American

study, 54% of deaf boys and 50 % of deaf girls reported sexual abuse (Sullivan, McCay, & Scanlan, 1987).

Deaf people's high susceptibility to maltreatment of many sorts (Knutson & Sullivan, 1993) is part of a larger trend. The second National Incidence Study (NIS-2), compiled in 1986 and published in 1988, showed that children with disabilities ran nearly double the risk of maltreatment as children without disabilities (although in the case of physical maltreatment, it can be unclear whether the correlation reflects on disability as a precursor or result of maltreatment, Kolko, 2002). Other studies have confirmed that the presence of a disability puts a child at higher risk of maltreatment (Brown, et al., 1998), including neglect (Connell-Carrick, 2003). While the prevalence of self-reported childhood abuse and neglect varies depending on methodological issues, with the result that prevalence is recorded as much higher in some countries than in others (Stoltenborgh et al., 2011), it is a global problem, one that is consistently exacerbated among children with disabilities (Kendall-Tackett et al., 2005).

It's important to outline what we mean when we talk about neglect, since the definition and determination is neither simple nor straightforward, although certain situations are generally understood to constitute negligence. Sullivan (2000: 8) lists "failure to provide basic physical health care, supervision, nutrition, personal hygiene, emotional nurturing, education, or safe housing. It also includes child abandonment or expulsion..." The failure to provide emotional nurturing – that is, emotional neglect – is highly pertinent to the deaf child and should be understood as involving broad conceptual parameters, including parental failure to recognize the child's need for self-esteem (Hegar & Yungman, 1989) and for encouragement (Barnett, Miller-Perrin, & Perrin, 1997). Garbarino, Guttman, & Seeley (1986) define five subtypes of

psychological maltreatment; spurning, terrorizing, isolating, exploiting/ corruption, and denying emotional responsiveness.

Emotional harm is less obvious to detect and more difficult to document than physical and sexual harms, which leave evidence of visible marks; nevertheless, it is at least as damaging (Erickson & Egeland, 2011). Neglect is a chronic stressor, and if not addressed early, it can lead to abnormal activation of neurobiological stress system responses that are associated with worse cognitive and psychological outcomes (Gunnar & Quevedo, 2007; Bernard, Lind, & Dozier, 2014).

While all types of maltreatments risk cognitive harm (Gauthier et al., 1996; Glaser, 2000; Schore, 2001; Norman et al., 2012; Spratt et al., 2012), in a brain imaging study of children who were admitted for psychiatric evaluation (some with neglect/ abuse history and some without), neglect was found to have the most variability in the reduction of the corpus callosum compared to abuse (Teicher et al., 2004). Abnormal development of the corpus callosum is associated with dysfunctions in cognitive processing, including language processing (Hinkley et al., 2012). That the effects of neglect are biological are shown in Vanderwert and colleagues (2010), who establish a sensitive period for brain plasticity regarding neglect: in an electroencephalogram study of children who were exposed to severe psychosocial neglect as infants in institutions and then placed in foster care intervention, results indicated that the desirable increase in brain activity associated with a sensitive period occurred only for neglected children who were placed in foster care prior to 2 years of age.

We note further that neglect and abuse are intensified by isolation (Zebell & Peterson, 2003). Isolation can be considered a form of abuse, which brings us to the issue of linguistic neglect.

3 Linguistic neglect

In the general literature, early life stressors, including those involving social rejection and neglect, are linked to depression (Slavich & Irwin, 2014) and greater emotional sensitivity to stress (Dougherty, Klein, & Davila, 2004; McLaughlin et al., 2010). The impact of neglect is likely to be significantly higher for deaf children who have reduced access to language, are often isolated socially, and are already at risk for worse psychological and cognitive development that can impact academic disparity. Research on deaf youth ages 11 to 18 has documented that self-perception of poor access to language and communication is significantly associated with higher depressive symptomatology (Kushalnagar et al., 2011). Also, there is evidence of greater depression severity in deaf adult patients who retrospectively reported feeling left out from family communication during childhood compared to deaf adult patients who had better communication with their parents (Leigh & Anthony, 1999).

Difficulties with communication at home are repeatedly listed as one of the risk factors for depression disorders among deaf children (Fellinger et al., 2009). More recently, a study of 143 deaf college students found that difficulties in basic communication with parents significantly increase the odds of depression symptomatology during adulthood (Kushalnagar, Bruce, Sutton, & Leigh, 2016). The higher odds ratio may be partly due to the invisible emotional neglect that deaf children experience, which is not documented or reported until much later, after the individual seeks psychological treatment.

Isolating a child and denying emotional responsiveness to a child go hand-in-hand with not maintaining an environment for the child to build a solid foundation in a language. All children need regular and frequent exposure to an accessible language during the critical (or

sensitive) period between birth and 3 or 4 years old (Mayberry et al., 2011), or they risk linguistic deprivation – a biological state that interferes with the development of neurolinguistic structures in the brain (Skotara et al., 2012; see also Leybaert & D’Hondt, 2003; Lyness et al., 2013) and that appears to decrease grey matter in certain parts of the brain (Penicaud et al., 2013). Linguistic deprivation inhibits fluency in any language and correlates with a range of poor cognitive and academic outcomes (Wolkomir, 1992; Humphries et al., 2012). The more famous examples of linguistic deprivation, such as Itard’s “wild child” (Malson & Itard, 1972), “Genie” (Fromkin et al., 1974), and others (Nelson, Zeanah, & Fox, 2007), have captured the interest of those seeking to document the effects of linguistic deprivation on humans. However, many less sensational cases exist, where early lack of ordinary care is associated with cognitive deficits, particularly language deficits (Spratt et al., 2012; Schaller, 2012). Early and prolonged lack of human language interaction has been shown to produce severe disorders that are unlikely to be reversible (Kumar et al., 2013). Deficiencies of appropriate input at critical points in development are more likely to cause harm to a child’s cognitive development, and, therefore, relate directly to the determination of neglect (Sullivan, 2000).

Many deaf children who are raised using only spoken language do not receive enough access to auditory information to develop language. Some cases fall near the extreme end of the spectrum of disorders or harms in that these children do not become entirely fluent in any language and have cognitive deficits associated with those faculties that require a firm foundation in a first language (Mayberry, 2002). As early as 1993, Mather & Mitchell (1993: 120) introduced the term “communication abuse” for the failure to provide deaf children with “full access to communication”. Severe language deprivation can be considered its own mental health disorder, the ‘language deprivation syndrome’ (Glickman, 2009a; Gulati, 2003, 2014;

Hall, Levin, & Anderson, 2016). Not protecting against this syndrome is argued to be severe neglect.

On top of these biological harms, the notion of social communication has emerged over the last few decades as a way to group together a range of concepts related to language deprivation, with much of the discussion revolving around children with autism (McEvoy et al., 1993; Mundy & Crowson, 1997; Wetherby et al., 2007; among many), but being just as applicable to any child who is deprived full access to language, including deaf children (Peterson & Siegal, 2000; Peterson et al., 2005; Astington & Baird, 2005; among many). Without full access to language, the child's privilege of social communication is taken away, which in turn has severe consequences. Lack of social communication inhibits development of a healthy, strong sense of self (Breivik, 2005; Hintermair, 2005; among many), inhibits developing resiliency in order to deal with adversity so it impedes executive function (Figueras et al., 2008; Hauser et al., 2008; among many), and makes it hard for children to get along with and have empathy for others, which impedes the development of a Theory of Mind (Woolfe et al., 2002; Hughes & Leekam, 2004; Schick et al., 2007; among many). The child without social communication does not have the chance to develop these social and cognitive skills, which are prerequisites for education and for assuming a productive and satisfying position in society. Thus not protecting a child's social communication is considered severe neglect. Additionally, anyone left without social communication is left without health communication, another instance of neglect.

In deaf children with no language delays (meaning deaf children who sign from an early age), the architecture of the brain is protected, and social communication is strong. These children have been found not to have an issue with sustained attention, which is an important

cognitive skill for being able to function in an educational setting (Dye & Hauser, 2014) and which is one reason signing deaf children do better academically than non-signing ones (as outlined in Section 3.1 below).

What makes a language accessible to a child? If a child is exposed regularly and frequently to a language and picks up that language naturally without explicit training and exercise (as generally happens with hearing children in a speech environment and with deaf children in a signing environment), the language qualifies as accessible to that child. On the other hand, if a child is exposed regularly and frequently to a language but does not pick it up even after explicit training and exercise (as can happen with deaf children in a speech environment), the language is arguably inaccessible to that child. Between those two ends lies a gray area in which decisions by caregivers and professionals have as much bearing on the lack of access as the fact of the hearing loss. Just as hearing loss can affect access to spoken language, which is a biological constraint on language exposure, so can decisions to exclude exposure to sign language affect access to language, which is a social constraint.

An important point is that sign languages are accessible to all deaf children (including deaf-blind given that there are tactile variations of sign languages). That is why a recent panel of experts reporting in *Pediatrics* concluded that providing a sign language as early as possible is the more reliable way to ensure a deaf child's language development and prevent linguistic deprivation (Napoli et al., 2015). Providing deaf children with a sign language also combats the isolation that characterizes much of the neglect reported on in the literature. The harm from failing to assure language development is compounded by the fact that this particular neglect increases deaf children's risk for other maltreatments (Embry, 2000; Mathur & Mitchell, 1993;

Sullivan & Knutson, 2000) and decreases their ability to report these maltreatments (Johnson, 2011).

3.1 Sources of linguistic neglect

If failing to provide a sign language to a deaf child risks linguistic deprivation and therefore – like not requiring a child to wear a seatbelt – constitutes neglect, one may wonder why families and those giving professional advice to them decide to take this risk, given that parents have a natural desire to protect their children, and professionals who work with deaf children and their families are committed to their welfare. The answer lies in historical views about language acquisition and sign languages that have resisted change despite new research requiring social attitude change about sign language and updated informed practice by professionals. This resistance has led many to delay acceptance that deprivation is occurring. In their work on the sexual abuse of deaf children, Cassady and colleagues (2005: 4) say, “They [deaf children] may have been surrounded by rich language input, but were unable to access it; often unbeknownst to their caregivers, but sometimes because caregivers are aware but in denial and do not address the need for their children to learn communication skills.” We here explore the issues of social attitudes and lack of information among professionals, and show how the combination of the two can lead to denial.

Language development, a critical part of overall cognitive development, is under most circumstances a naturally acquired artifact of human interaction. As outlined earlier, when human language interaction is withheld or absent, the result is severe cognitive deficits. Although social services typically intervene when abuse is detected (Iwaniec, 2006: 120; Jenny, 2010), it is rare for adult caregivers of these children to be held liable for these harms, which

create handicaps. In fact, the idea that caregivers can create handicaps in their children through neglect is generally discussed with respect to unborn fetuses (such as in Parness, 1982; Scott, 2002), not small children. It is assumed that it is sufficient to employ treatments, therapies, and interventions long established by the hearing sciences with deaf children. If the deaf child has deficits, it is assumed that these are due to the condition of deafness rather than the lack of action on the part of caregivers. Even in the most extreme cases, public policy does not consider the fact that these harms are preventable or avoidable and does not locate responsibility for avoiding them with anyone.

One historical misconception behind this thinking is that language is taken as equivalent to speech. This assumption is outdated and comes with severe consequences. Language is a cognitive faculty that can be manifested in more than one modality: oral-aural, realized as speech, and manual-visual, realized as sign. The two modalities are equal cognitive citizens, so to speak; language development is modality-independent and people can express themselves fully in either modality. Evidence supporting this comes from research in many areas, including linguistic analysis (Padden, 1988; among many), first language acquisition (Chamberlain, Morford, & Mayberry, 2000; among many), neurology in matters of language pathologies (Campbell, MacSweeney, & Waters, 2008; among many) and language processing (Emmorey, 2002; among many), as well as expressive capacity (Bauman, Rose, & Nelson, 2006; among many). To be cognitively and psychosocially healthy, children need language – regardless of its modality. For deaf children, visual language – that is, a sign language – satisfies that need naturally.

Despite the preponderance of relevant scientific evidence, the status of sign languages as *bona fide* languages has not been understood by medical professionals (Humphries et al., 2014)

and society at large. The reasons for this may be multiple, including the desire to make deaf children as “normal” as possible, thus sidestepping the potentially stigma-carrying use of a sign language (Lane, 2005; among many). Another factor may be the desire to avoid work that seems impossible: families would need to learn to sign in order to raise their deaf children with a sign language – and that task appears daunting to many. Whatever the source, this misunderstanding makes it difficult to fully realize the long-lasting impact of language deficits and other ensuing cognitive deficits on deaf children. As a result, under-informed child-welfare and educational-policy perspectives enable behaviors that contribute to deaf children’s language and cognitive deficits, which in turn contribute to subsequent maltreatments.

Research over the past several decades reveals that full and prolonged exposure to a sign language for a deaf (or hearing) child results in language development that follows the same patterns and produces the same developmental results as exposure to a spoken language does for a hearing child (Courtin, 2000; Woolfe, Want, & Siegal, 2002; Mayberry, del Giudice, & Lieberman, 2011; among many). The research suggests that sign languages are exactly what the deaf child needs for good cognitive development across-the-board, including good social communication, as noted earlier. Deaf children need to have their visual attention captured in order to learn best (Dye et al., 2008). To withhold a sign language from deaf children and to instead invest hope in their acquiring a spoken language is to miss a natural pathway to cognitive development, and it constitutes a risk not justified by historical patterns of development in deaf children. Deaf children who acquire a sign language from birth do not risk language delay or deficit; their reading abilities are better than deaf children from other backgrounds (Chamberlain & Mayberry, 2008; Goldin-Meadow & Mayberry, 2001; Moores, 2006; Holmer, Heimann, & Rudner, 2016); and the spoken language skills of the children who have cochlear implants in this

group are better than the spoken language skills of the children whose parents are hearing (Hassanzadeh, 2012), a factor that opens up personal and professional opportunities. There is a strong correlation between better signing skills and better print literacy in study after study (most recently, Hrastinski & Wilbur, 2016; and see the earlier work of Lederberg et al., 2013). With continued means of direct communication appropriate to the individual (sign, speech, or writing) and with appropriate accommodations such as amplifications, FM systems, captioning, or interpreting services throughout schooling, deaf children can grow up to be productive adults in the workforce (Cawthorn, Schoffstall, & Garberoglio, 2014).

3.2 Responsibility for language deprivation and neglect

Parents of deaf children do not make their decisions about how to raise their child in a vacuum. Typically, parents are selectively informed, at least initially (in the USA, around 96% of deaf children are born to hearing parents – Mitchell & Karchmer, 2004) and are more likely to be vulnerable as they are stressed by an unexpected situation they are unprepared for (Aras et al., 2014; Koester & Meadow-Orlans, 1990). It is natural that parents turn to the higher status medical and hearing-science professions for guidance.

These professions too often provide misinformation. Partly that is because medical schools have been remiss in not covering relevant information in their curricula (Humphries et al., 2014), and continuing medical education (CME) programs have not taken up the slack. In particular, most medical schools and CME programs do not teach about the biological foundation of language acquisition, the cognitive harm of linguistic deprivation, and the fact that sign languages satisfy cognitive needs just as well as spoken languages do. From social stigmatization and uninformed beliefs comes a bias among medical professionals against sign language. Since

they are not kept abreast of the relevant scientific research, medical professionals have historically taken the view that deafness is a problem that needs to be “treated”, and some even say “cured” (Branson, & Miller, 2005); deafness doesn’t conform to the norm – in a sense like apples that “fall far from the tree” (Solomon, 2012). This lack of modern understanding about language, cognition, and sign language creates a gap that hearing-science professionals and cochlear implant (CI) manufacturers fill with the offer of the treatment or cure needed for deafness via technology, a means that the medical profession is inclined to trust and that the parent is willing to accept. These professionals together then tend to promote a speech-only approach to the raising and educating of deaf children.

Some manufacturers and/or implant teams even ask parents to sign an agreement saying they will keep their deaf child away from a sign language (Knoors & Marschark, 2014: 148), despite evidence that many deaf children with CI receive no language benefit (Giraud & Lee, 2007). In a survey of over 20,000 deaf children implanted since 2000, 47% of them had stopped using their CI (Watson & Gregory, 2005), a strong indication that the children were not receiving significant benefit (although the children report many additional reasons, including facial twitching, post-surgery scarring, stigma from wearing the device, and pain from both the device and the auditory input). Both the medical profession and CI manufacturers are aware of the variable success rate with CIs and know it is impossible to predict with accuracy which children will have success -- witness the large number of articles about training to use CIs in the medical literature.

A set of factors has been found to positively correlate with CI success: higher socioeconomic status of the family, implantation before the age of 12 months, motivation of the family to carry out the training required to use the CI, and several others (Svirsky, Theo, &

Neuburger, 2004; Santarelli et al., 2008; Szagun & Stumper, 2012). However, even children who have all the positive correlates – the optimal cases –experience failure (Humphries et al., 2012), and most CI children are not optimal cases. In fact, poverty is implicated in higher levels of sensorineural deafness around the globe (for Canada, see Bowd, 2005; for India, see Reddy et al., 2006; for Malawi, see Hasselt & Kretten, 2002; for Pakistan, see Musani et al., 2011; for the United States, see many, especially Oghalai et al., 2002, and Prince et al., 2003, and so on). Further, families have little time for focusing on the training regimen that is required (Punch & Hyde, 2010; Most & Zaidman-Zait, 2001).

Once such a speech-only approach is promoted, public policy falls in line with what is argued to be standard acceptable medical practice. There is awareness and often documentation in child welfare services that language and other developmental delays of deaf children are culprits in a variety of maltreatments the children suffer, but they have not challenged medical or hearing professionals with regard to the speech-only approach. For example, Embry & Grossman (2007) report on what they deemed a “successful” community practice effort to deal with child abuse, particularly with respect to deaf children. This practice focused on “linguistic access”, as deaf people do better with clinicians who are culturally competent (Glickman, 2009b; Black & Glickman, 2008; Gournaris & Aubrecht, 2013), and “who sign themselves and who use counseling techniques that resonate with deaf people” (Glickman, 2013: 15). The use of signing in these counseling situations can create a strong bond, as well as ensure full communication (similarly to what White, 2001, reports for deaf children adopted by deaf parents). While this practice is commendable, the organization that Embry & Grossman described, the Los Angeles Child Abuse Councils (2015), to this day does not list among their Prevention Tips the recommendation that deaf children be taught a sign language so that they will not have a

language deficit and, thus, be less vulnerable to abuse – this despite the fact that they acknowledge that language deficit is a culprit. It seems even well-intentioned child-welfare practices stop short of making appropriate recommendations.

Given the state of the professions and their reluctance to acknowledge the issues, parents may be confused, especially since in some instances mandated reporters (physicians, nurses, social service providers, audiologists, and psychologists) might decide that implantation and avoidance of a sign language is “in the best interests” of the child, thus implicitly threatening the parents if they do not follow their advice (see discussion in Bender, 2004; Zimmerman, 2009; Byrd et al., 2011).

A large portion of the responsibility, then, lies with the professionals. The parents are not expected to be equipped to carry that responsibility fully, while the professionals have committed to that responsibility by virtue of their profession. If professionals are truly to protect and serve deaf children, they are obligated to understand and operationalize the cumulative evidence of the importance of sign language to deaf children’s cognitive development.

4 Action

The responsibility to protect deaf children against linguistic neglect and the vulnerability to abuse that ensues falls on many: the medical profession, hearing science professionals, the cochlear implant industry, educators, and child welfare services. The last several years have witnessed considerable advocacy for remedial action among medical and hearing-science professionals (including Kushalnagar et al., 2010; Humphries et al., 2012, 2014, 2016); however, no advocacy work we know of has been directed at child welfare services. This is a gap that needs to be remedied for two critical reasons. First, doctors (and other medical professionals)

often do not follow the children's development after the initial consultations and thus are not positioned to know the consequences of their own advice, while child welfare services witness the consequences firsthand. Second, the potential for conflict of interest arises with medical professionals (kick-backs from CI companies are an example— see Department of Justice, 2010), but no such potential for conflict of interest arises with child welfare agencies. Child welfare agencies are, therefore, strategically positioned to play a key role in addressing the problem of linguistic neglect.

We offer initial suggestions for encouraging positive effects, which are based, in part, on comparison with how laws against corporal punishment of children in several countries have come about and their positive effects.

4.1 Comparison to anti-corporal punishment laws

Whether or not a parent is justified in punishing a child with a spanking or other corporal violence has been a topic of controversy for the past few decades, where the controversy is complicated by the fact that the practice has been part of family traditions at a personal, ethnic, and even national level in many places. The issue of corporal punishment offers a useful comparison to the issue of a speech-only approach to the raising of deaf children precisely because it is controversial and the controversy involves what parents may see as their rights in raising their children within their culture, and because the intent on the part of the parents is not harm (Durrant, 2006), yet there are significant potential harms, both physical and psychosocial. Further, the comparison allows for a useful practical model for what child welfare services can do.

As recently as 1992, a survey in the state of Ohio found that 59% of pediatricians and 70% of family physicians supported mild spanking in some disciplinary situations (McCormick, 1992). Since then, three forces have brought about a significant change in the attitudes of professionals in North America, turning them against corporal punishment: recognition of children's rights, advances in pediatric psychology, and greater understanding of the dynamics of parental violence (Durrant, 2008). In particular, research has shown that physical punishment is positively correlated with negative developmental outcomes (aggression and antisocial behavior – see Gershoff, 2002; Aucoin, Frick, and Bodin, 2006; as well as depression and suicide – see DuRant et al., 1994; Turner & Finkelhor, 1996), regardless of the cultural group a family belongs to and regardless of the fact that the intent in most cases is to punish or teach, not to harm (for overview, see Durrant, 2008). Research has also shown that parental factors such as stress (Travillion & Snyder, 1993) and socioeconomic status (Straus, 1991) correlate with increased corporal punishment. Just six years after the Ohio survey, the American Academy of Pediatrics recommended against spanking (American Academy of Pediatrics Committee on Psychosocial Aspects of Child and Family Health, 1998).

In some countries, institutions outside the medical profession have taken a lead in opposing corporal punishment. In 2004, for example, the Canadian Psychological Association issued this policy statement (Canadian Psychological Association, 2004):

Physical punishment has been consistently demonstrated to be an ineffective and potentially harmful method of managing children's behaviour. It places children at risk of physical injury and may interfere with psychological adjustment. To reduce the prevalence of physical punishment of children and youth, public awareness campaigns must deliver a clear message that physical punishment may place children at risk of physical and psychological harm. Second, public education strategies that increase Canadians' knowledge of child development should be supported. Third, evidence based programs for developing parenting skills should be supported.

Many other Canadian organizations have joined in the campaign (Durrant, 2008).¹ Of particular importance here, the Child Welfare League of Canada (CWLC) is working with the Public Health Agency of Canada to examine family violence with the goal of supplementing policy, programming, and future research, as well as working with the Family Violence Initiative of the Department of Justice on prevention efforts and priorities at the national level (CWLC, 2013).

Many countries have passed laws banning corporal punishment with children, Sweden being the first (in 1979), with 17 other European nations following over the next thirty years (Bussman, Erthal, & Schroth, 2011).² Other countries have declared physical punishment of children illegal, though not via the establishment of a specific law (such as Italy, with a highest court ruling – Durrant, 2000). The movement is global in scope (Durrant, 2008).

Sweden seems to be the country most studied with respect to the banning of corporal punishment, so we report on those studies here. One of the goals of the law in Sweden was to shift parental attitudes (Sverne 1993); although violence against children had been illegal for decades, many children were still being injured as “discipline” and parents needed to be educated that this amounted to abuse (Durrant and Olsen, 1997), hence the passing of a specific law. Large-scale public awareness campaigns resulted in over 90% of the Swedish population being familiar with the law a year after it was introduced (Ziegert, 1983). Parental attitude has changed: Swedish parents now engage much less frequently in corporal punishment (Edfeldt, 1996; Janson, 2005), and, though on occasion they might “err and strike their children”, they

¹ Canadian Academy of Child and Adolescent Psychiatry, Canadian Association of Child Life Leaders, Canadian Association of Occupational Therapists, Canadian Association of Paediatric Health Centres, Canadian Dental Association, Canadian Institute of Child Health, Canadian Nurses Association, Canadian Paediatric Society, Canadian Physiotherapy Association, Canadian Psychological Association, Canadian Public Health Association, Canadian Red Cross, and the College of Family Physicians of Canada.

² Finland (1983), Norway (1987), Austria (1989), Cyprus (1994), Denmark (1997), Latvia (1998), Croatia (1999), Germany (2000), Iceland (2003), Bulgaria (2003), Ukraine (2004), Rumania (2005), Hungary (2005), Greece (2006), the Netherlands (2007), Portugal (2007), and Spain (2007).

view these as lapses in good parenting (Durrant, 2011, p. 381). Organizations such as Save the Children Sweden (<http://resourcecentre.savethechildren.se/publishers/save-children-sweden>) keep up efforts at informing and educating parents and children, an important support of the law; in Germany, in contrast, the law banning corporal punishment was publicized, but not as intensively and continuously as in Sweden, and a much lower percentage of the population is aware of it (Bussmann, 2005). In a study comparing five countries with laws banning corporal punishment, many indicators point to Sweden as having the lowest incidence of such family violence (Bussmann, Erthal, & Schroth, 2011). Evidently, a combination of public education with law reform is a more effective strategy than either alone (Durrant & Ensom, 2012).

Most important, since the 1979 law, the negative outcomes at least partially attributed to corporal punishment have been reduced in Sweden, including rates of youth suicide and alcohol and drug use (Durrant, 2000). Additionally, youth involvement in crimes (theft, narcotics trafficking, rape, homicide, and other assaults) has declined substantially (Durrant, 2000), suggesting that the law is doing the job it was intended to do.

In looking at the example of efforts against corporeal punishment of children, we see several strategies for changing social attitudes and professional practices, and the lessons to be taken from them are as follows. Greatly increasing social awareness of sign languages and the benefits of visual access to language for deaf children has already begun. Increasing training and awareness of language acquisition in two modalities, aural and visual, also needs to be a priority in the professions. Policies and codes of practice need to be reviewed, written, and practiced in child services. Existing laws may need to be tweaked, and new laws may need to be passed. Advocacy by institutions and associations as well as consumer and public support groups is needed to spur and bolster interest and a sense of responsibility by professionals and their

organizations. Although the controversy about corporeal punishment may still exist, social and cultural pressure coupled with research has indicated an alternative path is better for children. The situation of language development for deaf children is even stronger: regardless of one's stance on the place of sign language in deaf children's lives, to continue to exclude it is a significant risk, while including it poses no risk at all.

4.2 Change in practice

Child Protective Service (CPS) agencies respond to reports of child neglect, limiting the targets of their interventions to the particular caregivers in a given situation. CPS agencies have no direct responsibility for changing the behavior of other individuals or institutions that may contribute to parents' failure to protect their children. Yet in the case of deaf children, those other professionals and institutions with zero tolerance for alternative approaches to speech contribute to parents' failure to provide their children with sign language. We, therefore, recommend a fundamental change in the involvement of CPS with the health of deaf children: CPS need to assume an active role in recognizing the problem, defining responsibility, assigning accountability, laying out what needs to be done, and educating the public.

The crucial first step is explicit recognition by child welfare and social service communities that there is a chronic and widespread problem among deaf children and their families with regard to the linguistic development of the children. Child welfare and social services communities need to document the problem and publicize their findings in publications and websites directed at expectant parents, parents, medical professionals, and educators of small children. Again, as the law banning corporal punishment in Sweden shows us, educating the public plays a major role in changing attitudes and behavior.

The second step towards change is for professionals to inform themselves more deeply about sign languages, the benefits of bilingual and bimodal language acquisition, and the need for both sign and the spoken/print language exposure as the deaf child progresses in early childhood, in the educational system and through life. This information should help to explicitly identify the locus of delay in language acquisition as due to not enough exposure to accessible language for the child. The basis for a new standard of care then becomes clear: early and well-informed advice to parents of deaf children by all professionals that exposure to sign language is the most effective way to protect their child's cognitive and psychosocial health.

Child welfare and social service communities are in a position to take this step immediately if they share their own awareness of this problem and its remedies. When they publicize their own documentation of linguistic deprivation, they can conclude with recommendations for all involved in the health, raising, and educating of deaf children.

In this way, child welfare services can support parents in their desire to maximize their children's chances of healthy cognitive and psychosocial development. By giving public information, they can reduce parents' confusion and sense of powerlessness, and help them adopt behaviors that will build their parental confidence and that protect their children's health.

Documentation of the sort recommended here will go a long way toward changing public attitude. Even before that documentation is done, it is important to recognize that neglect is happening at this writing. Therefore, a health emergency exists for deaf children who are not receiving adequate exposure to language for timely cognitive development. While education of the public would be very helpful in the long term, immediate action should be taken based on the preponderance of evidence already available from research in psychology and linguistics. States' child welfare statutes, in particular those involving abuse and neglect, need to be reviewed now,

and by amending existing statutes or adding new statutes, they should recognize linguistic neglect as a harm to deaf children.

While we have argued here that not providing a deaf child with exposure to a sign language constitutes maltreatment, professionals' pervasive lack of information about language acquisition and the historical prejudice against sign languages are so extreme that it would be advisable to add to existing statutes explicit language to the effect that not providing a deaf child with a sign language can constitute child neglect. This would alert medical and other professionals to reconsider the advice they presently give to families. A wide range of helping professionals might be inclined to report to CPS cases of deaf children who are suffering from language deprivation – not just mandated reporters. Early detection and contact with the parents who most need help in the form of information and suggestions for behavior are critical in early years of the child's development. Every month that is lost further worsens the effects of deprivation.

Although it is not for child welfare services alone to shoulder the responsibility of protecting deaf children, there are certain strategies that would kick-start the social action that is needed to deal with what is an urgent problem. A starting point would be for the field of child welfare and child welfare personnel to become informed themselves so that they can better inform others. Institutions that offer undergraduate and/or graduate level degrees in social welfare as well as continuing education credit programs for social workers should include and highlight information about language acquisition and the need for sign language acquisition among deaf children. Child welfare services can then produce policies, guidelines, procedures and materials that inform families and other responsible professionals about the potential and the reality of language deprivation in deaf and hard of hearing children. They need to strengthen

policies and regulations to empower action related to language neglect. Finally, they need to encourage reporting and intervention as early as possible when harm is done to prevent further harm, since the developmental process is time sensitive.

One of the purposes of the present article is to initiate needed professional development of social service providers and of anyone involved in the Early Hearing Detection and Intervention (EDHI) Program. As a start, the web-based information brochure on “hearing loss” issued by the Centers for Disease Control and Prevention (CDC, 2015) and similar agencies in other countries should be revamped to reflect the urgency and severity of language neglect.

For our part, we offer a place to start. Social service providers can point all families of deaf children who are referred to them to the option grid “Deafness in infancy and childhood: Language options” (<http://patient.info/decision-aids/deafness-in-infancy-and-childhood-language-options>). Additionally, suggestions on how to advise families can be found in the recent *Clinical Pediatrics* article by Humphries and colleagues (2016).

5 Conclusion

All deaf children should be enabled to acquire a sign language through early, frequent and regular exposure; failure to do so greatly increases the risk of cognitive harm and thus constitutes neglect. Professionals working with deaf children have the responsibility to keep abreast of scientific findings and modify their recommendations about the raising and educating of deaf children accordingly, rather than perpetuate practices that do harm to a class of children - deaf children. Because acquiring sign language does no harm and carries no risk, it is much safer for deaf children to have early and sustained exposure to it than the alternative of a speech-

only approach, which carries strong risk of inadequate exposure to language. Professionals who work with families of deaf children are responsible advisors when they strive to ensure that deaf children be continually exposed to a sign language.

An established principle in society, the right to language, is becoming more applicable to deaf children and their right to intact and natural language. Sign language ensures this right because of its accessible nature. Deaf children have a legal right to language (Humphries et al., 2013), and they have a right to grow up bilingually, using a sign language and a spoken language (often in the written form of that language) (Grosjean, 2001).

We close with this reminder (for elaboration, see Humphries et al., 2013): following the Salamanca Statement and Framework for Action on Special Needs Education (UNESCO 1994, paragraph 21 page 18), and following the United Nations Convention on the Rights of Persons with Disabilities Article 24.3(b) and Article 24.4 (CRPD, 2006), professionals, including physicians, hearing science specialists, advocates and participants in the cochlear implant industry, and those in child welfare services should ensure that a sign language not be seen as a competitive option but as an inclusive option. Better still, it should not be seen **even** as an option but as an urgent remedy to the problem of language neglect.

References

- American Academy of Pediatrics Committee on Psychosocial Aspects of Child and Family Health. (1998). Guidance for effective discipline. *Pediatrics*, 101, 723–727.
- Aras, I., Stevanović, R., Vlahović, S., Stevanović, S., Kolarić, B., & Kondić, L. (2014). Health related quality of life in parents of children with speech and hearing impairment. *International Journal of Pediatric Otorhinolaryngology*, 78, 323-329. doi:10.1016/j.ijporl.2013.12.001
- Astington, J. W., & Baird, J. A. (Eds.). (2005). *Why language matters for theory of mind*. Oxford: Oxford University Press.
- Aucoin, K. J., Frick, P. J., & Bodin, S. D. (2006). Corporal punishment and child adjustment. *Journal of Applied Developmental Psychology*, 27, 527-541.
- Barnett, O., Miller-Perrin, C. L., & Perrin, R. D. (1997). *Family violence across the lifespan*. New York: Sage.
- Bauman, H.-D., Nelson, J. L., & Rose, H. (Eds.). (2006). *Signing the body poetic: Essays on American Sign Language literature*. Berkeley, CA: University of California Press.
- Bender, D. G. (2004). Do Fourteenth Amendment considerations outweigh a potential state interest in mandating cochlear implantation for deaf children? *Journal of Deaf Studies and Deaf Education*, 9, 104-111. doi: 10.1093/deafed/enh002
- Bernard, K., Lind, T., & Dozier, M. (2014). Neurobiological consequences of neglect and abuse. In J. E. Korbin & R. D. Krugman (Eds.), *Handbook of child maltreatment* (pp. 205-223). Dordrecht: Springer.
- Black, P., & Glickman, N. S. (2008). Language and learning challenges in the deaf psychiatric population. In N. S. Glickman (Ed.), *Cognitive-behavioral therapy for deaf and hearing persons with language and learning challenges (Counseling and psychotherapy)* (pp. 1-46). New York and London: Routledge.
- BMFSFJ. (2012). Lebenssituation und Belastungen von Frauen mit Behinderungen und Beeinträchtigungen in Deutschland Langfassung. Accessed 30 March 2016: <http://www.bmfsfj.de/BMFSFJ/Service/publikationen,did=199822.html>
- Bowd, A. D. (2005). Otitis media: Health and social consequences for aboriginal youth in Canada's north. *International Journal of Circumpolar Health*, 64, 2-3.
- Branson, J., & Miller, D. (2005). Damned for their difference: The cultural construction of deaf people as disabled. *Scandinavian Journal of Disability Research*, 7, 129-132. doi: 10.1080/15017410510032244

Breivik, J-K. (2005). Vulnerable but strong: Deaf people challenge established understandings of deafness. *Scandinavian Journal of Public Health*, 33, 18-23.

Brown, J., Cohen, P., Johnson, J. G., & Salzinger, S. (1998). A longitudinal analysis of risk factors for child maltreatment: Findings of a 17-year prospective study of officially recorded and self-reported child abuse and neglect. *Child Abuse & Neglect*, 22, 1065-1078. doi:10.1016/S0145-2134(98)00087-8

Bussmann, K. D. (2005). *Auswirkungen des Verbots von Gewalt in der familialen Erziehung*. Unveröffentlichter Forschungsbericht. Martin-Luther-Universität Halle-Wittenberg.

Bussmann, K. D., Erthal, C., & Schroth, A. (2011). Effects of banning corporal punishment in Europe—a five-nation comparison. In J. E. Durrant & A. B. Smith (Eds.) *Global pathways to abolishing physical punishment: Realizing children's rights* (pp. 299-322). New York and London: Routledge.

Byrd, S., Shuman, A. G., Kileny, S., & Kileny, P. R. (2011). The right not to hear: The ethics of parental refusal of hearing rehabilitation. *The Laryngoscope*, 121, 1800-1804. doi: 10.1002/lary.21886

Campbell, R., MacSweeney, M., & Waters, D. (2008). Sign language and the brain: A review. *Journal of Deaf Studies and Deaf Education*, 13, 3-20. doi: 10.1093/deafed/enm035

Canadian Psychological Association. (2004). Policy Statement on Physical Punishment of Children and Youth. 2004. Accessed 9 August 2016: www.cpa.ca/aboutcpa/policystatements

Cassady, C., Kellogg, M., MacDonald, M., Mounty, J., & Northrop, K. (2005). Guidelines on Children's Advocacy Center services for children who are deaf/hard of hearing. N. Chandler (Ed). Hartford, CT: National Children's Alliance and Aetna Foundation Children's Center. Accessed 16 February 2016: www.nationalcac.org/professionals/images/stories/pdfs/cc%20standard%20chandler%20hearing%20impaired.pdf

Cawthon, S. W., Schoffstall, S. J., & Garberoglio, C. L. (2014). How ready are postsecondary institutions for students who are d/Deaf or hard-of-hearing? *Education Policy Analysis Archives*, 22, n13. ERIC Number: EJ1032012

CDC. (2015). Hearing loss in children. Centers for Disease Control and Prevention. Accessed 30 March 2016: <http://www.cdc.gov/ncbddd/hearingloss/index.html>

Chamberlain, C. & Mayberry, R. (2008). American Sign Language syntactic and narrative comprehension in skilled and less skilled readers: Bilingual and bimodal evidence for the linguistic basis of reading. *Applied Psycholinguistics*, 29, 367-388. doi: 10.1017/S014271640808017X

Chamberlain, C., Morford, J., & Mayberry, R. (Eds.). (2000). *Language acquisition by eye*. Mahwah, N.J.: Lawrence Erlbaum Associates.

Connell-Carrick, K. (2003). A critical review of the empirical literature. Identifying correlates of child neglect. *Child and Adolescent Social Work Journal*, 20, 389-425.

Courtin, C. (2000). The impact of sign language on the cognitive development of deaf children: The case of Theories of Mind. *Journal of Deaf Studies and Deaf Education*, 5, 266-276.
doi: 10.1093/deafed/5.3.266

CRPD. 2006. Convention on the rights of persons with disabilities. Accessed 30 March 2016: <http://www.un.org/disabilities/convention/conventionfull.shtml>

CWLC. 2013. Mapping and promoting the use of family violence surveillance data. Accessed 9 August 2016: <http://www.cwlc.ca/en/projects>

Department of Justice. (2010). United States Settles False Claims Act Allegations with Cochlear Americas for \$880,000. Accessed 28 May 2016: <https://www.justice.gov/opa/pr/united-states-settles-false-claims-act-allegations-cochlear-americas-880000>.

Dougherty, L.R., Klein, D. N., & Davila, J. A. (2004). Growth curve analysis of the course of dysthymic disorder: The effects of chronic stress and moderation by adverse parent-child relationships and family history. *Journal of Consulting and Clinical Psychology*, 72, 1012-1021.
doi: 10.1037/0022-006X.72.6.1012

DuRant, R. H., Cadenhead, C., Pendergrast, R. A., Slavens, G., & Linder, C. W. (1994). Factors associated with the use of violence among urban Black adolescents. *American Journal of Public Health*, 84, 612-217.

Durrant, J. E. (2000). Trends in youth crime and well-being since the abolition of corporal punishment in Sweden. *Youth & Society*, 31, 437-455.

Durrant, J. E. (2006). Distinguishing physical punishment from physical abuse: Implications for professionals. *Developing Practice: The Child, Youth and Family Work Journal*, 16, 43-51.

Durrant, J. E. (2008). Physical punishment, culture, and rights: current issues for professionals. *Journal of Developmental & Behavioral Pediatrics*, 29, 55-66.

Durrant, J. E. (2011). Legal reform and attitudes toward physical punishment in Sweden. In M. Freeman (Ed.), *Children's Rights: Progress and Perspectives* (pp. 366-394). Leiden and Boston: Martinus Nijhoff Publishers.

Durrant, J., & Ensom, R. (2012). Physical punishment of children: Lessons from 20 years of research. *Canadian Medical Association Journal*, 184, 1373-1377.

Durrant, J. E. and Olsen, G. M. (1997). Parenting and public policy: Contextualizing the Swedish corporal punishment ban, *Journal of Social Welfare and Family Law*, 19, 443-461.

Dye, M. W., & Hauser, P. C. (2014). Sustained attention, selective attention and cognitive control in deaf and hearing children. *Hearing Research*, 309, 94-102.
doi:10.1016/j.heares.2013.12.001

Dye, M. W. G., Hauser, P. C., & Bavelier, D. (2008). Visual attention in deaf children and adults. In M. Marschark & P. C. Hauser (Eds), *Deaf cognition: Foundations and outcomes* (pp. 250-263). Oxford: Oxford University Press.

Edfeldt, Å. W. (1996). The Swedish 1979 Aga ban plus fifteen. In D. Frehsee, W. Horn & K.-D. Bussmann (Eds.), *Family violence against children. A Challenge for Society* (pp. 27-37). Berlin, New York: de Gruyter.

Embry, R. A. (2000). An examination of risk factors for the maltreatment of deaf children. Doctoral dissertation, University of California, Berkeley. Dissertation Abstracts International, 61, 07.

Embry, R. A., & Grossman, F. D. (2007). The Los Angeles County response to child abuse and deafness: A social movement theory analysis. *American Annals of the Deaf*, 151, 488-498. doi: 10.1353/aad.2007.0003

Emmorey, K. (2002). *Language, cognition and the brain: Insights from sign language research*. Mahwah, N.J.: Lawrence Erlbaum Associates.

Erickson, M. F., & Egeland, B. (2011). Child neglect. In J. E. B. Myers (Ed.), *The APSAC handbook on child maltreatment* (3rd ed.) (pp. 103-124). Thousand Oaks, London, New Delhi: Sage Publications.

Fellinger, J., Holzinger, D., Sattel, H., Laucht, M., & Goldberg, D. (2009). Correlates of mental health disorders among children with hearing impairments. *Developmental Medicine & Child Neurology*, 51, 635-641. doi: 10.1111/j.1469-8749.2008.03218.x

Figueras, B., Edwards, L., & Langdon, D. (2008) Executive function and language in deaf children. *Journal of Deaf Studies and Deaf Education*, 13, 362-377. doi:10.1093/deafed/enm067

Fromkin, V., Krashen, S., Curtiss, S., Rigler, D., & Rigler, M. (1974). The development of language in Genie: A case of language acquisition beyond the "critical period". *Brain and Language*, 1, 81-107. doi:10.1016/0093-934X(74)90027-3

Garbarino, J., Guttman, E., & Seeley, J. W. (1986). *The psychologically battered child*. San Francisco: Jossey-Bass.

Gauthier, L., Stollak, G., Messé, L., & Aronoff, J. (1996). Recall of childhood neglect and physical abuse as differential predictors of current psychological functioning. *Child Abuse & Neglect*, 20, 549-559. doi:10.1016/0145-2134(96)00043-9

Gershoff, E. T. (2002). Corporal punishment by parents and associated child behaviors and experiences: a meta-analytic and theoretical review. *Psychological Bulletin*, 128, 539-579.

Giraud, A-L., Lee, H-J. (2007). Predicting cochlear implant outcome from brain organization in the deaf. *Restorative Neurology and Neuroscience*, 25, 381-390.

Glaser, D. (2000). Child abuse and neglect and the brain—a review. *Journal of Child Psychology and Psychiatry*, 41, 97-116.

Glickman, N. S. (2009a). Summary and conclusions. In N. S. Glickman (Ed.), *Cognitive-behavioral therapy for deaf and hearing persons with language and learning challenges (Counseling and psychotherapy)* (pp. 323-346). New York and London: Routledge.

Glickman, N. S. (2009b). Do you hear voices? Problems in assessment of mental status in deaf persons with severe language deprivation. In N. S. Glickman (Ed.), *Cognitive-behavioral therapy for deaf and hearing persons with language and learning challenges (Counseling and psychotherapy)* (pp. 47-78). New York and London: Routledge.

Glickman, N. S. (2013). Introduction: What is deaf mental health care? In N. S. Glickman (Ed.), *Deaf mental health care* (pp. 1-36). New York and London: Routledge.

Goldin-Meadow, S., & Mayberry, R. (2001). How do profoundly deaf children learn to read? *Learning Disabilities Research & Practice*, 16, 221-228. doi: 10.1111/0938-8982.00022

Gournaris, M. J., & Aubrecht, A. L. (2013). Deaf/hearing cross-cultural conflicts and the creation of culturally competent treatment programs. In N. S. Glickman (Ed.) *Deaf mental health care* (pp. 69-106). New York and London: Routledge.

Grosjean, F. (2001). The right of the deaf child to grow up bilingual. *Sign Language Studies*, 1, 110-114. doi: 10.1353/sls.2001.0003

Gulati, S. (2003). Psychiatric care of culturally deaf people. In N. S. Glickman & S. Gulati (Eds.), *Mental health care of deaf people: A culturally affirmative approach* (pp. 33-107). Mahwah, NJ: Lawrence Erlbaum Associates.

Gulati, S. (2014). Language deprivation syndrome. *ASL Lecture Series*. Retrieved from https://www.youtube.com/watch?v=8yy_K6VtHJw

Gunnar, M., & Quevedo, K. (2007). The neurobiology of stress and development. *Annual Review of Psychology*, 58, 145-173. doi: 10.1146/annurev.psych.58.110405.085605

Hall, W. C., Levin, L., & Anderson, M. L. (2016). Language deprivation syndrome: A potential

neurodevelopmental disorder with social origins. *Manuscript submitted for publication.*

Hassanzadeh, S. (2012). Outcomes of cochlear implantation in deaf children of deaf parents: Comparative study. *Journal of Laryngology & Otology*, 126: 989-994.

Hasselt, V. P. & Kreten, V. E. (2002). Treatment of chronic suppurative otitis media with ofloxacin in hydroxypropyl methylcellulose ear drops: A clinical/bacteriological study in a rural area of Malawi. *International Journal of Pediatric Otorhinolaryngology*, 63, 49-56.

Hauser, P. C., Lukomski, J., & Hillman, T. (2008). Development of deaf and hard-of-hearing students' executive function. In M. Marschark & P. C. Hauser (Eds.), *Deaf cognition: Foundations and outcomes* (pp. 286-308). Oxford: Oxford University Press.

Hegar, R. L., & Yungman, J. J. (1989). Toward a causal typology of child neglect. *Children and Youth Services Review*, 11, 203-220. doi:10.1016/0190-7409(89)90021-2

Hinkley, L. B. N., Marco, E. J., Findlay, A. M., Honma, S., Jeremy, R.J., Strominger, Z., et al. (2012). The role of corpus callosum development in functional connectivity and cognitive processing. *PLoS ONE* 7(8): e39804. doi:10.1371/journal.pone.0039804

Hintermair, M. (2008). Self-esteem and satisfaction with life of deaf and hard-of-hearing people—A resource-oriented approach to identity work. *Journal of Deaf Studies and Deaf Education*, 13, 278-300.

Holmer, E., Heimann, M., & Rudner, M. (2016). Evidence of an association between sign language phonological awareness and word reading in deaf and hard-of-hearing children. *Research in Developmental Disabilities*, 48, 145-159. doi:10.1016/j.ridd.2015.10.008

Hrastinski, I., & Wilbur, R. B. (2016). Academic achievement of deaf and hard of hearing students in an ASL/English Bilingual Program. *Journal of Deaf Studies and Deaf Education*, 21, 156-170. doi: 10.1093/deafed/env072

Hughes, C., & Leekam, S. (2004). What are the links between theory of mind and social relations? Review, reflections and new directions for studies of typical and atypical development. *Social Development*, 13, 590-619.

Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D. J., Padden, C., Rathmann, C., & Smith, S. (2012). Language acquisition for deaf children: reducing the harms of zero tolerance to the use of alternative approaches. *Harm Reduction Journal*, 9(16). doi: 10.1186/1477-7517-9-16. Accessed 30 March 2016: <http://www.harmreductionjournal.com/content/9/1/16>.

Humphries, T., Kushalnagar, R., Mathur, G., Napoli, D. J., Padden, C., Rathmann, C., & Smith, S. (2013). The right to language. *The Journal of Law, Medicine & Ethics*, 41, 872-884. doi: 10.1111/jlme.12097

- Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D. J., Padden, C., Pollard, R., Rathmann, C., & Smith, S. (2014). What medical education can do to ensure robust language development in deaf children, *Medical Science Educator*, 24, 409-419. doi: 10.1007/s40670-014-0073-7 <http://link.springer.com/article/10.1007/s40670-014-0073-7>
- Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D. J., Padden, C., Rathmann, C., & Smith, S. (2016). Language choices for deaf infants: Advice for parents regarding sign languages. *Clinical Pediatrics*, doi: 10.1177/0009922815616891.
- Iwaniec, D. (2006). *The emotionally abused and neglected child: Identification, assessment and intervention: A practice handbook*. New York: John Wiley & Sons.
- Janson, S. (2005). Response to Beckett, C. (2005). The Swedish myth: 'The Corporal Punishment Ban and child death statistics', *British Journal of Social Work*, 35, 1411-1415.
- Jenny, C. (Ed.). (2010). *Child abuse and neglect: Diagnosis, treatment, and evidence*. St. Louis, MO: Elsevier Health Sciences.
- Johnson, H. A. (2011). Prevention of child abuse & neglect through the provision of effective early intervention services. EHDl Webinar. East Lansing: Michigan State University. Accessed 16 February 2016: http://infantheating.org/meeting/ehdi2011/ehdi_2011_presentations/topical6/Harold_Johnson.pdf
- Kendall-Tackett, K., Lyon, T., Taliaferro, G., & Little, L. (2005). Why child maltreatment researchers should include children's disability status in their maltreatment studies. *Child Abuse & Neglect*, 29, 147-151.
- Knors, H., & Marschark, M. (2014). *Teaching deaf learners: Psychological and developmental foundations*. Oxford: Oxford University Press.
- Knutson, J., & Sullivan, E. (1993). Communicative disorders as a risk factor in abuse. *Topics in Language Disorders*, 13(4), 1-14.
- Koester, L. S., & Meadow-Orlans, K. P. (1990). Parenting a deaf child: Stress, strength, and support. In D. F. Moores & K. P. Meadow-Orlans (Eds.), *Educational and developmental aspects of deafness* (pp. 299-320). Washington, D.C.: Gallaudet University Press.
- Kolko, D. J. (2002). Child physical abuse. In J. B. Myers, L. Berliner, J. Briere, C. T. Hendrix, C. Jenny, & T. A. Reid (Eds.), *The APSAC handbook on child maltreatment* (2nd ed.) (pp. 21-54). Thousand Oaks, CA: Sage Publications.
- Kumar, A., Behen, M. E., Singsoonsud, P., Veenstra, A. L., Wolfe-Christensen, C., Helder, E., & Chugani, H. T. (2013). Microstructural abnormalities in language and limbic pathways in orphanage-reared children: a diffusion tensor imaging study. *Journal of Child Neurology*. doi 0883073812474098.

Kushalnagar, P., Mathur, G., Moreland, C. J., Napoli, D. J., Osterling, W., Padden, C., P., & Rathmann, C. (2010). Infants and children with hearing loss need early language access. *Journal of Clinical Ethics*, 21, 143-154.

Kushalnagar, P., Topolski, T. D., Schick, B., Edwards, T. C., Skalicky, A. M., & Patrick, D. L. (2011). Mode of communication, perceived level of understanding, and perceived quality of life in youth who are deaf or hard of hearing. *Journal of Deaf Studies and Deaf Education*, 16, 512-523.

~~Kushalnagar, P., Bruce, S., Sutton, T., & Leigh, I. W. (2015). Communicative stress, gender, and depression. Poster presentation at the American Psychological Association Convention, Toronto, Canada.~~

Kushalnagar, P., Bruce, S., Sutton, T., & Leigh, I. W. (2016). Retrospective basic parent-child communication difficulties and risk of depression in deaf adults. *Journal of Developmental and Physical Disabilities*. Doi: 10.1007/s10882-016-9501-5.

Kvam, M. H. (2004). Sexual abuse of deaf children. A retrospective analysis of the prevalence and characteristics of childhood sexual abuse among deaf adults in Norway. *Child Abuse & Neglect*, 28, 241-251. doi:10.1016/j.chiabu.2003.09.017

Lane, H. (2005). Ethnicity, ethics, and the deaf-world. *Journal of Deaf Studies and Deaf Education*, 10, 291-310. doi: 10.1093/deafed/eni030

Lederberg, A. R., Schick, B., & Spencer, P. E. (2013). Language and literacy development of deaf and hard-of-hearing children: Successes and challenges. *Developmental Psychology*, 49, 15-30. doi:10.1037/a0029558

Leigh, I. W., & Anthony, S. (1999). Parent bonding in clinically depressed deaf and hard-of-hearing adults. *Journal of Deaf Studies and Deaf Education*, 4, 28-36. doi: 10.1093/deafed/4.1.28

Leybaert, J., & D'Hondt, M. (2003). Neurolinguistic development in deaf children: The effect of early language experience. *International Journal of Audiology*, 42, S34-40.

Los Angeles Child Abuse Councils. (2015) Accessed 17 February 2016: <http://www.lachildabusecouncils.org/Thecouncils-countywide.html>

Lyness, C., Woll, B., Campbell, R., & Cardin, V. (2013). How does visual language affect crossmodal plasticity and cochlear implant success? *Neuroscience and Biobehavioral Reviews*, 37, 2621-2630.

Malson, L., & Itard, J. (1972). *Wolf children [and] The Wild Boy of Aveyron*. London: NLB.

- Mather, S., & Mitchell, R. (1993). Communication abuse: A sociolinguistic perspective. In B. Smith (Ed.), *Conference proceedings: Post-Milan ASL and English literacy: Issues, trends, and research* (pp. 117-134). Washington, DC: Gallaudet University Press.
- Mayberry, R. I. (2002). Cognitive development in deaf children: The interface of language and perception in neuropsychology. In S. J. Segalowitz (Ed.), *Handbook of neuropsychology 8, Part 2* (pp. 71-107). Amsterdam: Elsevier.
- Mayberry, R. I., del Giudice, A. A., & Lieberman, A. (2011). Reading achievement in relation to phonological coding and awareness in deaf readers: A meta-analysis. *Journal of Deaf Studies and Deaf Education, 16*, 164-188. doi: 10.1093/deafed/enq049
- Mayberry, R. I., Chen, J. K., Witcher, P., & Klein, D. (2011). Age of acquisition effects on the functional organization of language in the adult brain. *Brain and Language, 119*, 16-29. doi:10.1016/j.bandl.2011.05.007
- McCormick, K. F. (1992). Attitudes of primary care physicians toward corporal punishment. *JAMA, 67*, 3161-3165.
- McEvoy, R. E., Rogers, S. J., & Pennington, B. F. (1993). Executive function and social communication deficits in young autistic children. *Journal of Child Psychology and Psychiatry, 34*, 563-578.
- McLaughlin, K. A., Kubzansky, L. D., Dunn, E. C., Waldinger, R., Valliant, M.D., & Koenen, K. C. (2010). Childhood social environment, emotional reactivity to stress, and mood and anxiety disorders across the life course. *Depression and Anxiety, 12*, 1087-1094. doi: 10.1002/da.20762
- Mitchell, R. E., & Karchmer, M. A. (2004). Chasing the mythical ten percent: Parental hearing status of deaf and hard of hearing students in the United States. *Sign Language Studies, 4*, 138-163.
- Moore, D. (2006). Print Literacy: The acquisition of reading and writing skills. In D. Moore & D. Martin (Eds.), *Deaf learners: Developments in curriculum and instruction* (pp. 41-55). Washington DC: Gallaudet University Press.
- Most, T., & Zaidman-Zait, A. (2001). The needs of parents of children with cochlear implants. *Volta Review, 103*, 99-113.
- Mundy, P., & Crowson, M. (1997). Joint attention and early social communication: Implications for research on intervention with autism. *Journal of Autism and Developmental Disorders, 27*, 653-676.
- Musani, M. A., Khan, A., Rauf, A., & Ahsan, M. (2011). Frequency and causes of hearing impairment in tertiary care center. *Journal of Pakistan Medical Association, 61*, 141. Accessed 30 March 2016: <http://www.jpma.org.pk/PdfDownload/2579.pdf>

- Napoli, D. J., Mellon, N., Niparko, J. K., Rathmann, C., Mathur, G., Humphries, T., Handley, T., Scambler, S., & Lantos, J. (2015). Should all deaf children learn sign language. *Pediatrics*, 136, 170-176.
- Nelson, C. A., Zeanah, C. H., & Fox, N. A. (2007). The effects of early deprivation on brain-behavioral development: The Bucharest Early Intervention Project. In D. Romer & E. Walker (Eds.), *Adolescent psychopathology and the developing brain: Integrating brain and prevention science* (pp. 197-215). Oxford: Oxford University Press.
- NIS-2. (1988). *Study findings: Study of national incidence and prevalence of child abuse and neglect*. Washington, DC: U. S. Department of Health and Human Services.
- Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLoS Medicine*, 9(11), doi: 10.1371/journal.pmed.1001349
- Oghalai, J. S., Chen, L., Brennan, M. L., Tonini, R., & Manolidis, S. (2002). Neonatal hearing loss in the indigent. *The Laryngoscope*, 112, 281–286. doi: 10.1097/00005537-200202000-00015
- Padden, C. (1988). *Interaction of morphology and syntax in American Sign Language, Outstanding dissertations in linguistics, Series IV*. New York: Garland Press.
- Parness, J. A. (1982). The duty to prevent handicaps: Laws promoting the prevention of handicaps to newborns. *Western New England Law Review*, 5, 431-464.
- Penicaud, S., Klein, D., Zatorre, R. J., Chen, J. K., Witcher, P., Hyde, K., & Mayberry, R. I. (2013). Structural brain changes linked to delayed first language acquisition in congenitally deaf individuals. *Neuroimage*, 66, 42-49. doi:10.1016/j.neuroimage.2012.09.076
- Peterson, C. C., & Siegal, M. (2000). Insights into theory of mind from deafness and autism. *Mind & Language*, 15, 123-145.
- Peterson, C. C., Wellman, H. M., & Liu, D. (2005). Steps in Theory-of-Mind development for children with deafness or autism. *Child Development*, 76, 502-517.
- Prince, C., Miyashiro, L., Weirather, Y., & Heu, P. (2003). Epidemiology of early hearing loss detection in Hawaii. *Pediatrics*, 111, 1202–1206.
- Punch, R., & Hyde, M. (2010). Rehabilitation efforts and stress in parents of children with cochlear implants. *The Australian and New Zealand Journal of Audiology*, 32, 1-18.
- Reddy, M., Vardhan, V., Bindu, L. H., Rani, P. U., & Reddy, P. P. (2006). Postnatal risk factors of congenital hearing impairment: Otitis media, head injuries, and convulsions. *International Journal of Human Genetics*, 6, 191-193.

- Santarelli, R., De Filippi, R., Genovese, E., & Arslan, E. (2008). Cochlear implantation outcome in prelingually deafened young adults. *Audiology and Neurotology*, *13*, 257-265, ISSN 1420-3030. doi:10.1159/000115435
- Schaller, S. (2012). *A man without words*. Berkeley: University of California Press.
- Schenkel, L., Rothman-Marshall, G., Schlehofer, D., Towne, T., Burnash, D., & Priddy, B. (2014). Child maltreatment and trauma exposure among deaf and hard of hearing young adults. *Child Abuse & Neglect*, *38*, 1581-1589. doi:10.1016/j.chiabu.2014.04.010
- Schick, B., De Villiers, P., De Villiers, J., & Hoffmeister, R. (2007). Language and theory of mind: A study of deaf children. *Child Development*, *78*, 376-396.
- Schore, A. N. (2001). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, *22*, 201-269.
- Scott, R. (2002). *Rights, duties and the body: Law and ethics of the maternal-fetal conflict*. Portland, OR: Hart Publishing.
- Skotara, N., Salden, U., Kugow, M., Hanel-Faulhaber, B., & Roder, B. (2012). The influence of language deprivation in early childhood on L2 processing: An ERP comparison of deaf native signers and deaf signers with a delayed language acquisition. *BMC Neuroscience*, *13*, 44. doi:10.1186/1471-2202-13-44
- Slavich, G. M., & Irwin, M. R. (2014). From stress to inflammation and major depressive disorder: A social signal transduction theory of depression. *Psychological Bulletin*, *140*, 774. doi: 10.1037/a0035302
- Solomon, A. (2012). *Far from the tree: Parents, children and the search for identity*. New York: Simon and Schuster.
- Spencer, N., Devereux, E., Wallace, A., Sundrum, R., Shenoy, M., Bacchus, C., & Logan, S. (2005). Disabling conditions and registration for child abuse and neglect: a population-based study. *Pediatrics*, *116*, 609-613.
- Spratt, E. G., Friedenberg, S. L., Swenson, C. C., LaRosa, A., De Bellis, M. D., Macias, M. M., Summer, A. P., Hulsey, T. C., Runyan, D. K., & Brady, K. T. (2012). The effects of early neglect on cognitive, language, and behavioral functioning in childhood. *Psychology*, *3*, 175-182. doi: 10.4236/psych.2012.32026
- Stoltenborgh, M., van IJzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: meta-analysis of prevalence around the world. *Child Maltreatment*, *16*, 79-101. doi: 10.1177/1077559511403920
- Straus, M. A. (1991). Discipline and deviance: physical punishment of children and violence and other crime in adulthood. *Social Problems*, *38*, 133-154.

- Sullivan, P. M., & Knutson, J. F. (2000). Maltreatment and disabilities: a population-based epidemiological study. *Child Abuse and Neglect*, 24, 1257-1273. doi:10.1016/S0145-2134(00)00190-3
- Sullivan, P. M., McCay, V., & Scanlan, J. M. (1987). Sexual abuse of deaf youth. *American Annals of the Deaf*, 132, 256-262. doi: 10.1353/aad.2012.0614
- Sullivan, S. (2000). *Child neglect: current definitions and models: a review of child neglect research, 1993-1998*. Ottawa, Ontario: National Clearinghouse on Family Violence Prevention.
- Sverne, T. (1993). Children's rights in Scandinavia in a legal and historical perspective, *Family and Conciliation Courts Review*, 31, 299-312.
- Svirsky, M., Theo, S., & Neuburger, H. (2004). *Audiology and Neuro-otology*, 9, 224-233.
- Szagan, G., & Stumper, B. (2012). Age or experience? The influence of age at implantation and social and linguistic environment on language development in children with cochlear implants. *Journal of Speech, Language, and Hearing Research*, 55, 1640-1654. doi:10.1044/1092-4388
- Teicher, M., Dumont, N. L., Ito, Y., Vaituzis, C., Giedd, J., & Anderson, S. (2004). Childhood neglect is associated with reduced corpus callosum area. *Biological Psychiatry*, 56, 80-85. doi: 10.1016/j.biopsych.2004.03.016
- Travillion, K., & Snyder, J. (1993). The role of maternal discipline and involvement in peer rejection and neglect. *Journal of Applied Developmental Psychology*, 14, 37-57.
- Turner, H. A., & Finkelhor, D. (1996). Corporal punishment as a stressor among youth. *Journal of Marriage and the Family*, 58, 155-166.
- UNESCO. 1994. *The Salamanca Statement and Framework for action on special needs education: adopted by the World Conference on Special Needs Education; Access and Quality. Salamanca, Spain, 7-10 June 1994*. Unesco. Accessed 30 March 2016: http://www.unesco.org/education/pdf/SALAMA_E.PDF
- Vanderwert, R. E., Marshall, P. J., Nelson, C. A. III, Zeanah, C. H., & Fox, N. A. (2010). Timing of intervention affects brain electrical activity in children exposed to severe psychosocial neglect. *PLoS ONE* 5(7): e11415. doi:10.1371/journal.pone.0011415
- Watson, L., & Gregory, S. (2005). Non-use of implants in children: Child and parent perspectives. *Deafness and Education International*, 7, 43-58. doi: 10.1179/146431505790560482

Wetherby, A. M., Watt, N., Morgan, L., & Shumway, S. (2007). Social communication profiles of children with autism spectrum disorders late in the second year of life. *Journal of Autism and Developmental Disorders*, 37, 960-975.

White, B. J. (2001). This child is mine: Deaf parents and their adopted deaf children. In L. Bragg (Ed.), *Deaf world: A historical reader and primary sourcebook* (pp. 68-80). New York and London: New York University Press.

Wolkomir, R. (1992). American Sign Language: It's not mouth stuff--it's brain stuff. *Smithsonian*, 23(4), 30-41.

Woolfe, T., Want, S. C., & Siegal, M. (2002). Signposts to development: Theory of mind in deaf children. *Child Development*, 73, 768-778. doi: 10.1111/1467-8624.00437

Zebell, N., & Peterson, M.S. (2003). Special risk factors intensified by social isolation. In M. S. Peterson & M. Durfee (Eds.), *Child abuse and neglect: Guidelines for identification, assessment, and case management* (pp. 175-177). Volcano, CA: Volcano Press.

Zieger, K. A. (1983). The Swedish prohibition of corporal punishment: A preliminary report. *Journal of Marriage and Family*, 45, 917-926.

Zimmerman, A. B. (2009). Do you hear the people sing? Balancing parental authority and a child's right to thrive: The cochlear implant debate. *Journal of Health & Biomedical Law*, 5, 309-329.