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## **6 Play in Children with Hearing Impairments**

According to the World Health Organisation (WHO, 2015), 32 million children worldwide have hearing loss. The degree of hearing loss is classified into four subgroups: mild (26–40 dB), moderate (41–60 dB), severe (61–80 dB), and profound (over 80 dB) (WHO, 2015). The presence of hearing loss in childhood puts a child at risk for language, social, and academic difficulties. It can negatively affect the quality of life, even if the hearing loss is mild (Burkey, 2006). Language development and modalities of communication are strictly related to the emergence of play skills and influence the relationship with other children in mutual play situations.

Many factors affect the communication skills, as well as the cognitive and also the play development of children with hearing loss. They include: the degree of hearing loss, its etiology, the audiometric configuration, the age of onset, the age at which the child's hearing impairment is identified, the adequacy and the type of programme in the rehabilitation intervention, the presence of other impairments, the consistency of the adopted amplification mode (hearing aid, cochlear implant, bone-anchored hearing aid), the family and environmental influences and the attitudes of the other children and their parents (Spencer & Marschark, 2010; Sininger et al., 2010; Paul & Whitelaw, 2011; Harris, 2014; Mills et al., 2014).

### **6.1 Play and Language Development in Children with Hearing Impairments**

Young children explore the surrounding world through play: it is very important for a child's development. Play has been recognised by the United Nations High Commission for Human Rights as a right of every child. Play is crucial for communication, cognitive, physical, social, and emotional development of young children (Ginsburg, 2007).

Many studies have explored play in groups of children with hearing impairment. A hearing-impaired child can be as competent as a typically developing one. Individuals with hearing loss necessarily play, think, learn, or behave exactly like their hearing peers. Some research compared play behaviour of children with and without hearing impairment; part of the studies found similarities, but others ascertained differences that were strongly associated with language levels (Higginbotham & Baker, 1981 in Schirmer, 1989; Spencer & Marschark, 2010).

Hearing-impaired children and their families have a variety of opportunities to choose the communication methods as well as the rehabilitation methodology that will support learning. Usually, parents of children with mild or moderate hearing loss choose oral approaches (i.e., listening and spoken language), whereas for children with more severe hearing losses, parents may opt for a sign language. Other functional

outcomes, such as later socialisation, academic achievement, and self-esteem, are also considered by parents when deciding on the communication mode (Harris, 2014).

The interval between birth and auditory rehabilitation is not always negatively correlated with the neural development (Kral, 2013), as well as play, perceptual, linguistic, and cognitive abilities (Geers et al., 2007; Pisoni et al., 2008; Peterson et al., 2010; Havy et al., 2013). In cases of early identification of hearing loss, the communicative functions and play are not compromised in deaf children as well as in those children exposed to deaf sign language or in situations of bilingualism (Grosjean, 2015). Evidently, if detected language skills are related to oral skills, most of the deaf children will be out of compliance with the standard. In fact, bilingual children in inclusive school showed cognitive levels and language skills in sign language similar to hearing children (Tommasuolo, 2006).

It is worth noticing that the condition of a deaf child born in a family of deaf parents and then genetically close to them is different from that of many deaf children born to hearing parents. Congenital or acquired hearing impairment puts the child in a situation of diversity about their family, and this determines the approach to rehabilitation methods. In case one or both parents of the child are deaf and use the sign language, they usually find it very natural to adopt the sign language for the communication exchanges with their child.

What is important about language and play development is not the degree of hearing loss, but sharing the same condition and the same way of being in the world. Indeed, any communication delay does not seem to be given by deafness as such, but by the failure of early communicative interaction between adults and the deaf child (Malfatti, 2009). The lack of a real communicative relationship affects play more than the type of hearing impairment or the type of family.

White and White (1987) studied a group of young children with severe to profound hearing loss. They explored the relation between the child's age at the beginning of intervention, the hearing status of the family (deaf versus hearing parents), and the outcomes in language development. Children born in families with deaf parents were identified rather early because of routine hearing screening for infants. This situation gave the chance for these infants to begin early with the intervention and rehabilitation. This study found that the early identification and intervention could be a predictor of better spoken language in these children (Sininger et al., 2010), and correspondingly, of better play development. Today newborn hearing screening and cochlear implants give the opportunity for more children to rely on spoken language from an early age. When the level of verbal communication in children with hearing impairment is similar to their hearing peers, they have equal abilities to interact in play.

## 6.2 Play between Parents and Children with Hearing Impairments

Parents are the first playmates of children, because of their response to the playful infant behaviour. Infants naturally engage in different forms of play activities. During the years they grow up and have more experiences, thanks to interactions with adults and peers. It is their play with objects and people that stimulates brain development, and subsequently, cognitive growth (Piaget, 1962). One of the earliest forms of infant play is the repetitive motor activity. Infants also play by making sounds. They find these vocalisations pleasurable, and also draw attention and provoke playful response from caregivers (Wellhausen, 2002). Children with hearing impairment naturally produce rhythmic motor play through vocalisations, but this production decreases because they cannot hear themselves and cannot feel pleasure in listening to their own babbling. But, in case of consistent use of proper amplification (hearing aid, cochlear implant, bone-anchored hearing aid), the hearing abilities are stimulated, and respectively, they have a positive effect on the child–parent interaction and play behaviour.

Joint attention between a parent and a child develops during the first three years of life. This developmental process facilitates the acquisition of new words through interpersonal interactions and play. Joint attention subsequently forms representational skills and use of symbols in play. Cejas et al. (2014) found that young deaf children of hearing parents, compared to hearing counterparts, have deficits in joint engagement, which are related to oral language. In the youngest age groups, deaf children spend more time in unengaged states and less time in symbol states (e.g., parent and child are taking turns pretending to feed a doll). Clearly, the focus of their research is on oral relation and does not take into account shared communication in sign language. These results contrast with those from a study done by Spencer and Waxman (1995), which showed no differences in engagement states in play between deaf and hearing children aged 9 to 18 months.

## 6.3 Pretend Play in Children with Hearing Impairments

Researches about pretend play reported no significant differences comparing children with typical development and hearing-impaired children (Lyon, 1997; Spencer & Deyo, 1993; Spencer, 1996 in Brown et al., 2001). In 1990, Spencer, Deyo and Grindstaff showed that deaf children with deaf parents, who use sign language as their first language to communicate, spent equivalent amount of time in pretend play and produced the same amount and level of pretend play as their hearing counterparts. Another research by Brown et al. (2001) reported about pretend play and language production in children with hearing loss (between 3 and 6 years). The study showed that deaf children who have significant spoken language delay engaged in pretend play less often than their hearing peers (Higginbotham & Baker, 1981; Schirmer, 1989;

Cornelius & Hornett, 1990; Brown et al., 1997; Selmi & Rueda, 1998; in Brown et al., 2001). The scores for each one of the structures underpinning pretend play were lower in children with hearing loss. Children with hearing loss between 12 and 30 months of age in oral programmes produced lesser imaginative play than their hearing peers. Differences between the experimental and control groups were found in the language domain, but not in the cognitive domain (Brown et al., 2001). Verbal communication of hearing-impaired children is affected, but the nonverbal communication and time spent in pretend play are similar to typically developing children.

## 6.4 Symbolic Play in Children with Hearing Impairments

Humans use a wide variety of symbolic systems—spoken language, reading and writing, numbers, painting, drawing, music, and so on. Children develop these systems during the first five years of life by learning during play. Normally, play with language starts under the age of one, playing with sounds of the language or languages children are hearing around them. This is a very active process and quickly develops into making up new words, playing with rhymes. In case of hearing loss at an early age, it would result in oral language delay and the symbolic play would be affected.

Slade (1994) quotes a longitudinal study of play in six deaf children aged 1–3 by Gregory and Mogford (1983) who found that children with hearing impairment clearly demonstrated the capacity to use objects symbolically. But, comparing to the hearing counterparts of the same age, deaf children did not enact sequences of similar length and complexity (Slade & Wolf, 1994).

## 6.5 Free Play in Children with Hearing Impairments

Play provides a context in which children are motivated to communicate, and the availability of playmates increases the frequency and range of opportunities for language practice. Initiating, mediating, and sustaining a joint, playful activity requires children to use language in innovative ways and challenge them to communicate more clearly in social exchanges. Mills et al.'s (2014) findings in a study are supported by Odom et al. (1993). They observed that verbal interactions between peers were more likely to occur during play than during any other classroom activity. Barton and Wolery (2008) found that providing an intervention to increase play skills led to increased vocalisations, even though language was not a direct target of the intervention (Mills et al., 2014). It seems that free play supports language development of young children.

Play could be an effective medium for developing the necessary relationship to foster appropriate interaction (e.g., play turn-taking, sharing), and ultimately social

communicative growth (e.g., vocal/verbal initiations, responding, and turn-taking) between children with and without hearing loss (Bat-Chava & Deignan, 2001). The magnitude of language skills essential for spontaneous play is considerable.

De Luzio and Girolametto (2011) evaluated the types of initiations and responses during play between children with normal hearing and children with severe to profound hearing loss. They found no significant difference between the two groups in terms of their initiation efforts. Both deaf and hearing preschoolers frequently used vocalisations, smiles, and object-related acts as strategies to initiate play (Vandell & George, 1981). Hearing-impaired children used similar initiation strategies as their hearing peers. They include nonverbal initiation, invitation to play, offering an object, or imitating the behaviour of other children (Weisel et al., 2005).

Play behaviour in preschoolers with and without hearing loss was described in several research articles. Harris (2014) quotes a study by Lederberg et al. (1987) about free play, in which researchers documented the duration, the number, and the complexity of children's interactions. The conclusion of the study was that, during free play, both hearing and hearing-impaired children interacted more frequently with peers with similar hearing abilities (Harris, 2014).

## 6.6 Social Play in Children with Hearing Impairments

A study of play in nursery school by Schvarfman (1977) found differences in quality and nature of play between hearing-impaired and typically developing children. Deaf children spent more of their time as onlookers and in solitary play. They engaged in less parallel play and in less cooperative and dramatic play with their hearing peers (Slade, 1994).

Qayyum, Khan, and Rais (2015) observed play behaviour during leisure time of children with hearing impairment in special schools. They found that the most frequent play behaviour was social play (group play) followed by non-play behaviour (active conversation) and the last was cognitive play (games with rules). The cognitive functional play was the least because these games require better understanding of rules through listening. Qayyum et al. found that games, which require listening to rules before start of play, were not understood well by the children with hearing impairment. Pupils played better games that only require visual cues (Qayyum et al., 2015).

Xie (2013) quotes a research by Anita and Dittillo (1998) focused on social play of children with hearing impairment and hearing children during inside play in a small group. They found that children with hearing impairment engaged in significantly less associative or cooperative play than children with normal hearing, but they engaged equally in non-play and social play.

## 6.7 Conclusion

Many researchers explore play in hearing-impaired children. They found a strong relationship between play and language development. Play and language are indirectly influenced by the hearing status and the modality of communication (sign language or spoken language). Less optimal early experiences, such as deprivation of linguistic stimuli by the caregiver, lack of exposure to sign language, linguistics re-education delay, could impede normal cognitive and linguistic development of hearing-impaired children. Better language development in both sign language and spoken language is a predictor of better play behaviour. Children with hearing impairment think, learn, play, and behave exactly like their hearing peers. Deaf children could need more visual signs, cues, or speech reading and those need more time in turn-taking exchanges. However, more time in the exchanges does not mean worse quality of play interaction, especially when this is made with suitable communication mode for each child with hearing impairment. If the children with hearing loss are provided with supportive communication from early stage of their life, they develop and play like typically developing children.

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