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**Assessing the effect of a HOP therapy period on preverbal
communication skills in adults with profound intellectual disabilities**

– a multiple single subject study

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Master's Thesis in Logopedics
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**ÅBO AKADEMI UNIVERSITY –
FACULTY OF ARTS, PSYCHOLOGY AND THEOLOGY**

Abstract for master's thesis

Subject: Logopedics	
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Title of the work: Assessing the effect of a HOP therapy period on preverbal communication skills in adults with profound intellectual disabilities – a multiple single subject study	
Supervisor: Pirkko Rautakoski and Pia Lindevall	
Abstract: <p>Communication is a reoccurring challenge when working with persons with profound and multiple intellectual disabilities (PMID). Lack of meaningful interaction with others can in some cases lead to social isolation and behavioural problems in persons with PMID. The communicative challenges often arise due to caregivers and other possible communication partners not having enough knowledge of how to create meaningful interaction with this group of clients. The speech and language pathologist Sheridan Forster developed a therapy model called Hanging out program (HOP) to help professionals and others to improve their interaction with persons with PMID, as well as to increase quality of life in persons with PMID.</p> <p>The aim of the present study was to investigate if any changes happen in the usage of communicative acts in persons with PMID during a HOP therapy treatment.</p> <p>An experimental study with a multiple single subject design was conducted. Three participants were given twenty sessions of the HOP therapy treatment, during a period of four weeks. The therapy sessions were video recorded and analysed. Three communicative acts were chosen to be analysed during the therapy period; eye gaze, orientation and vocals. The participants' usage of these variables was calculated and converted into a social engagement index score ranging between 0 and 100, where higher scores equalled higher social engagement. The scores were then analysed qualitatively as well as visually with graphs.</p> <p>Results showed that an increase in the communicative act eye gaze occurred in all three participants. Orientation was the second most used communicative act. An increase in the usage of this act occurred in two of the participants and no notable change in one of the participants. Vocals was the least used communicative act among all participants during the whole therapy session. One of the participants had an increase in the communicative act vocals, whereas one had a decrease, and another had no change. In conclusion, there occurred an increase in the usage of the variables in most of the cases, however, the significance of the change could not be tested statistically.</p>	
Key words: communication, hanging out program, intensive interaction, preverbal communication, profound/severe and multiple intellectual disabilities	
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**ÅBO AKADEMI –
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Sammanfattning av avhandling pro gradu

Ämne: Logopedi	
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Arbetets titel: Effekten av en HOP-terapiperiod på preverbala kommunikationsförmågor hos vuxna personer med grav psykisk utvecklingsstörning – en multipel singel-subjekt-studie	
Handledare: Pirkko Rautakoski och Pia Lindevall	
Sammanfattning: <p>Kommunikation är en återkommande utmaning i arbete med personer med grav och multipel psykisk utvecklingsstörning (GMPU). Brist på meningsfylld interaktion med andra kan i vissa fall leda till social isolering eller utmanande beteende hos personer med GMPU. De kommunikativa utmaningarna härstammar ofta från att vårdare eller andra eventuella kommunikationpartners inte har kunskap om hur de ska skapa meningsfylld interaktion med denna klientgrupp. Talterapeut Sheridan Forster utvecklade en terapimodell vid namnet Hanging out program (HOP) för att hjälpa vårdare och närstående att förbättra sin interaktion med personer med GMPU och på så vis även förbättra dessa klienters livskvalitet.</p> <p>Syftet med denna studie var att undersöka om det förekom förändringar i användningen av kommunikativa handlingar hos personer med GMPU under en HOP-terapiperiod.</p> <p>En experimentell studie med multipel singel-subjekt-design utfördes. Tre deltagare fick tjugo sessioner av HOP-terapi under en period på fyra veckor. Terapisessionerna videofilmades och analyserades. Tre kommunikativa handlingar valdes som variabler för analysen; ögonkontakt, orientering och ljudande. Deltagarnas användning av dessa variabler under terapiperioden kalkylerades och konverterades till ett socialt engageringsindex-poäng. Skalan för indexet var 0 till 100 poäng, varav högre värden motsvarade mera frekvent social engagering. Poängen analyserades sedan kvalitativt samt visuellt med grafer.</p> <p>Resultaten visade en ökning i den kommunikativa handlingen ögonkontakt hos alla tre deltagare. Orientering var den andra mest använda kommunikativa handlingen. Det skedde en ökning i användningen av orientering hos två deltagare och ingen märkbar förändring hos en deltagare. Ljudande var den minst använda kommunikativa handlingen hos alla deltagare. En deltagare hade en ökning i användningen av variabeln ljudande medan de två resterande deltagarna hade en minskning respektive ingen förändring. Sammanfattningsvis skedde det en ökning i användningen av variablerna i de flesta fallen i denna studie, emellertid kunde signifikansen av förändringen inte testas statistiskt.</p>	
Nyckelord: grav/svår och multipel psykisk utvecklingsstörning, hanging out program, intensiv interaktion, kommunikation, preverbal kommunikation	
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1 Introduction

Communication is important for every human being and persons with profound and multiple intellectual disabilities (PMID) are no exception. However, complications in their communication are common due to the complex and profound nature of the disabilities (Ayyıldız, Akçin & Güven, 2016). Meaningful and functional communication with the environment can often be difficult for a person with PMID (Ayyıldız, Akçin & Güven, 2016). According to World Health Organization (1992), persons with the diagnosis F.73 Profound mental retardation have an IQ under 20, which is equivalent to the mental age of a 3-year-old. This causes severe limitations of self-care, continence, communication and mobility. Therefore, it is of great importance that special caregivers have knowledge of communicative behaviours and acts typical for the preverbal period (Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987). To have expertise in that area helps potential communication partners to understand and interact adequately with a person with PMID (Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987).

1.1 Preverbal communication

The foundations of preverbal communication for infants are social interaction, joint attention and regulated behaviour (Mundy et al., 2003; Mundy & Stella, 2000; Tomasello, 1995; Topbaş, Maviş & Erbaş, 2003; Westling & Fox, 2004). Regulated behaviour helps the baby express discomfort/comfort, physiological needs or interests and can take form in cries, smiles, movement of the body, facial expressions and gestures (Brady, Steeples and Fleming, 2005). An infant's first way of communicating is screaming, which indicates symptoms of hunger, tiredness or pain (Nettelbladt & Salameh, 2007). Gradually the infant starts making different sounds that express comfort, which later develop into babbling. An infant's sound making is considered a symptom of a nuisance or comfort, that becomes a signal when the infant communicates to its surroundings (Nettelbladt & Salameh, 2007). Eye gaze is as important as screaming and is established between the caregiver and the infant soon after birth. Eye gaze is an essential step for all human communication (Nettelbladt & Salameh, 2007). The first social interaction through eye gaze with another being might be the driving force behind infants' interest in human faces (Gluga & Csibra, 2007). Eye gaze then develops into person-object-person interaction

and, thus, guides learning already in the first months after birth (Striano & Reid, 2006). In other words, eye gaze constitutes an effective way of communication as well as detection of possible environmental threats (Adams & Kleck, 2003).

Receiving significant information through eye gaze is possible long before the acquirement of vocal language. The use of eye gaze is easily detected and can be used appropriately without conscious cognitive efforts (Hood, Willen & Driver, 1998; Langton, Watt & Bruce, 2000).

A baby learns mutual communication and interaction through observing the adult's behaviours. By doing so the baby will be able to give and maintain attention as well as develop turn-taking (Crais, Watson & Baranek, 2009; Stillman & Battle, 1985). A step further in the preverbal development there is joint attention, which involves shared mutual interest of an object or event (Tomasello, 1995). In other words, the baby maintains attention to an object together with another person, being aware of the fact that both are giving attention to the same object or event (Tomasello, 1995). These preverbal acts allow individuals to functionally communicate without words. The preverbal stages of communication can be divided into seven different stages (Bates, Benigni, Bretherton, Camaioni & Volterra, 1979; Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987) as seen below in table 1.

Table 1
Preverbal communication development divided into seven stages

Stage	Age (m)	Function
1	0-3	Pre-intentional behaviours; the baby communicates by reflex and impulse depending on its physiological state (hunger, pain, comfort, etc.).
2	3-8	Intentional behaviours; the baby has more control over its behaviour, but interpretation is needed by the caregiver because of lack of the baby's functional communication.
3	6-12	Unconventional pre-symbolic communication; the baby intentionally uses atypical social behaviours such as screaming, throwing of objects, biting and whining to attract the adult's attention.
4	12-18	Conventional pre-symbolic communication; the baby starts to use natural gestures such as waving, smiling, shaking head for approval or denial, lifting of arms to be picked up etc.
5	12-24	Concrete symbolic communication; the baby develops an understanding of the relationship between an object and its representative sign, for example smacking of the mouth at the thought of food.
6	12-24	Abstract symbolic communication; the baby simultaneously expresses itself verbally with single words and with body movements and natural gestures.
7	24+	Formal symbolic communication; verbal expression with two or more words develops as well as understanding of language grammar.

Note. m= months; (Bates et al., 1979; Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987)

When an adult gives responses to the communicative acts mentioned in table 1, the baby gradually develops its preverbal communication. Adult responses that support the baby's communication development are for example smiling, talking and looking at the baby and imitation of the baby's vocalizations. Gradually the baby will start to demonstrate more complex communication, for example reaching after, manipulating and pointing at objects (Bates et al., 1979; Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987).

Most persons with PMID are on the same developmental stage as infants in their preverbal stage regardless of their age and communication with them should therefore occur in a similar manner as with an infant (Rowland and Schweigert, 2005; Rowland & Stremel-Campbell, 1987; Topbaş, 2008).

1.2 Etiology and people with complex communication needs

Communication is a reoccurring challenge when working with persons with PMID (Grove, Bunning, Porter & Olsson, 1999) and assessment of their communicative skills is also complex due to the nature of the multiple disabilities and health issues (Bruce, Godbold & Naponelli-Gold, 2004; Crais & Roberts, 1996). Some of the defining components for persons with PMID are limited verbal skills, dependence on others to interpret communicative intent, delays in intellectual and social functioning and frequent physical, medical or sensory impairment (Bellamy, Croot, Bush, Berry & Smith 2010). Furthermore, up to 25-35% of persons with PMID suffer from hearing impairments (Evenhuis, Theunissen, Denkers, Vershuure & Kemme, 2001), 85% from visual impairments (Van Splunder, Stilma, Bernsen & Evenhuis, 2006), and 50% from epilepsy (Lhatoo and Sander, 2001). Persons with PMID are a small and heterogeneous group, the prevalence of persons with severe and profound intellectual disabilities in Finland is 0.13% (Arvio & Sillanpää, 2003). There are a variety of causes of PMID, for example chromosomal anomalies, infections, perinatal brain damage or degenerative conditions (Nakken & Vlaskamp, 2002). In Finland, the aetiology of PMID has been estimated to be genetic or congenital in 50.9% of the individuals, acquired in 19.3%, genetic and/or acquired in 18.3% and of unknown origin in 11.5% (Arvio & Sillanpää, 2003).

Communication by speech is an important part of mental and social well-being, and a lack of it can lead to diminished social skills, isolation and behavioural problems (Bott, Farmer & Rohde, 1997). The unconventional communication of a person with PMID often leads to uncertainty of meaning and poses a challenge in understanding his or her needs, thoughts and feelings (Grove et al., 1999). Indicated by frequency and the content of the interaction, it is often reported that the communication between the caregiver and the person with PMID is poor in quality (Felce et al., 2000; Felce & Perry, 1995; McConkey, Morris & Purcell, 1999). Arranging activities that support the needs and abilities of persons with PMID is a complicated task for disability support workers and therapists, as this group is one of the most vulnerable among persons with intellectual disabilities. Often questions arise about “how” and “when” to arrange these activities (Nakken & Vlaskamp, 2007).

Persons with PMID show only very subtle acts of communication to express themselves which easily leads to the cues being completely unobserved (Wilder & Granlund, 2003) or causing interpretation difficulties. According to Lowe, Felce and Blackman (1995) behaviours such as withdrawal and social avoidance are also often ignored despite the impact on the person's development and quality of life. Furthermore, different communicative acts do not only differ between persons but can also hold different meanings for different situations for the same person (Hogg, Reeves, Roberts & Mudford, 2001; Petry & Maes 2006). The communicative acts change depending on the person with PMID and the context of the interaction. For example, facial expressions, vocalization and muscle tone may vary (Grove et.al,1999). Disability support workers or other potential communication partners often use prior knowledge or context to interpret the content of the communication (Grove et al., 1999; Hostyn, Daelman, Janssen & Maes, 2010). Deficits in communication can also lead to disruptive or self-harming behaviour in persons with PMID (McClintoch, Hall & Oliver, 2003). Furthermore, self-injurious behaviour intervenes significantly with the quality of life of an individual (Bogaard, Nijman, Palmstierna, Embregts, 2018).

Important factors in facilitating the communication of persons with PMID are initiation of activity and tactile methods leading to joint attention (Hostyn et al., 2011; Lancioni et al., 2005; Mellstrom, Saunders, Saunders & Olswang, 2005). Hostyn (2011) describes the initiation as one of the core components in interaction. Interaction with a person with PMID also influences the client's level of alertness (Arthur, 2004; Guess, Roberts, Siegel-Causey, Rues,1995; Guess et. al, 1999). Recent studies show that work prioritizing the relationship with and the emotions of persons with PMID shows tendencies to be the most valuable (Thomas & Woods 2003; Whittington & Alexander 2001). In a study conducted by Whittington and Alexander (2001) five participants received therapy derived from intensive interaction over a period of eight weeks. The aim of the study was to enhance awareness of emotional variables and to build relationships. Both quantitative and qualitative analyses were used and indicated a positive change in several observable behaviours related to interactive ability across all the participants. Other studies show that special caregivers, families and therapists who takes the communication of a person with communicative impairments into consideration help the person improve his or her communicative abilities (Janssen, Riksen-Walraven & Van Dijk 2006).

This was shown in a study where a 10-year-old child with both visual and auditory impairments had an increase in communicative behaviours due to the child's caregiver using an intervention called the diagnostic intervention model. The purpose of the intervention was to increase the caregiver's capacity to recognize the child's signals, adapt to interactional context and attune behaviours to those of the child. Positively changed communicative behaviours in the child were initiation, confirmation and longer turns during interaction (Janssen, Riksen-Walraven & Van Dijk 2006).

1.3 Intensive interaction

There has been a need to develop an intervention to be able to support the scarce communication of people with PMID. Intensive interaction is an approach that uses preverbal communication techniques to interact with and improve sociability of persons with PMID or autism. The approach was developed in the 1980s from the idea of "augmented mothering", which is based on the naturalistic processes of "infant-caregiver interactions" (Ephraim, 1982; Nind & Hewett, 1994). Intensive interaction techniques are for instance vocal mirroring, responsive eye contact, facial expressions, and joint focus activities. The interaction is comparable to that of an infant and its caregiver, with imitations and turn-takes. The practitioner and the person with PMID together develop these techniques into a relationship with qualitative interactions (Nind & Hewett, 2001). Behaviour codes such as initiating social or physical contact, looking at face, joint focus, engagement, visual scanning, contingent responding and overriding were used in Clark & Seifer's (1983) and Nind & Hewett's (2001) study to measure the behavioural effects of intensive interaction.

Intensive interaction has been proven to be effective in promoting social engagement in individuals with communicative impairments, and specifically in persons with PMID (Coia & Handley, 2008; Leaning & Watson 2006; Nind 1996; Nind & Kellett 2002; Watson & Fisher 1997). Published empirical evaluations have tracked intensive interaction outcomes, with the aim of demonstrating increased usage of social behaviour and decreased distress behaviour (Zeedyk, Caldwell, & Davies, 2009). Studies have found beneficial effects of using intensive interaction, including improved preverbal communication skills and increased ability to initiate and maintain social contact (Elgie & Maguire 2001; Lovell, Jones & Ephraim 1998). In Elgie and Maguire's study (2001) conducted with a withdrawn adult with severe

learning disabilities, self-harm tendencies and visual impairments, it was reported that consistent use of intensive interaction gave positive outcomes in the development of the first stages of social and communication skills.

There are also results on how intensive interaction is beneficial in building positive relationships between clients and their employed caregivers (Watson & Knight, 1991). This was shown in a study including six participants with severe learning difficulties from the Gogarburn school in Edinburgh. Videotapes of intensive interaction between the participants and their school assistants were made over a school year. Increased levels of turn taking, eye contact and meaningful vocalizations were recognized (Watson & Knight, 1991).

In a research conducted by Nind (1996), a multiple baseline interrupted time-series design was used to assess the effect of intensive interaction on persons with severe developmental disabilities and autism. The six participants were all adult residents of a long-stay hospital. The results in this study showed that after a daily use of intensive interaction for 12-18 months, the participants started to behave in a way that encouraged others to be social with them and decreased ritualistic behaviours. The participants also improved preverbal and informal communication abilities and abilities to maintain and initiate social contact (Nind, 1996). In Lovell et al.'s (1998) study, the results of using intensive interaction on a hospitalized 53-year-old man demonstrated increased frequency of joint attention, smiling, laughing, vocalizing and physical contact.

1.4 Hanging Out Program

The Hanging Out Program (HOP) is a therapy model derived from the idea of intensive interaction and was developed by the speech and language pathologist Sheridan Forster (2008). The idea of HOP started in a day service for adults with disabilities, to ensure that no clients went through the day without having spent some time in interaction with another person. HOP is both an approach and an attitude. The approach is to spend at least 10 minutes per day interacting with a person and giving him/her 100% of your attention. The attitude is that everyone needs meaningful interaction with other people. One of the intentions of the model is that it can easily be adopted by caregivers, speech and language pathologists, psychologists etc. wanting to improve their interaction with persons with PMID (Forster, 2008).

HOP is not a strictly prescribed program, but it has some underlying principles to it. The model promotes daily intensive interaction with the client for at least 10 minutes, for 20 sessions or more. It is recommended to video record the sessions to be able to make a later evaluation of the outcome and make self-assessments to improve oneself for the next encounter (Forster, 2008). After each session it is essential that the person who performed HOP will reflect on what happened and write it down on a given HOP form. At the end of the therapy period, a summary will be made concerning the treatment outcomes and further arrangements (Forster, 2008). This was not done regularly in this research, since that function mainly exists for sharing experiences between caregivers at a unit giving HOP therapy. However, in this study every session was video recorded and later analysed through that rather than through a written format.

1.5 Aim of the study

The aim of the present study was to examine if the use of communicative acts among adults with profound intellectual disabilities changes during a period of HOP therapy treatment. The three participating clients in the study received a total of twenty HOP therapy sessions each during a four-week period. The HOP model is new (Forster, 2008) and, thus, the effects of the model have not been studied much. If the effects in this study would show positive results, the HOP model could be educated for caregivers working with persons with PMID. This would possibly make the interaction between the communication partners easier, as well as increase the quality of life among persons with PMID.

2 Method

The participants in the current study came from Kårkulla Joint Authority (KJA). Permission to conduct research at KJA was obtained from the leading board team for special care at KJA 27.10.2016. Ethical consent was also retrieved from the Board for Research Ethics at Åbo Akademi University 18.10.2016.

2.1 Study setting

The study was conducted at KJA, a corporation whose primary function is to provide service and care for intellectually disabled Swedish-speaking persons in Finland. KJA has a total of 42 care units and gives service to approximately 1600 persons per year. The 33 bilingual municipalities of Finland maintain KJA together. Some of KJA's important ambitions are to improve and maintain the clients' quality of life, participation and self-determination. The corporation also strives to spread knowledge about how to interact with demanding clients as well as prevention of their behavioural problems.

2.2 Participants

HOP therapy was given to three non-linguistic KJA residents. Suitable participants for the therapy were recommended by the corporation's employed speech and language pathologist. Written information about the study was sent to the clients' caregivers as well as a form for their written consent of the clients' participation (Appendix A). The participants were all adults (one female, two male), ranging in age from early 30s to late 50s. All participants had a diagnose of severe or profound intellectual disability, with an individual variety of comorbid diagnoses such as cerebral palsy, autism, epilepsy and psychotic disorders.

Participant A was a male adult in his 30s, with profound intellectual disabilities and cerebral palsy. Due to the cerebral palsy the participant's muscle functioning was hindered, and a wheelchair was used in almost all situations. Participant A also had an epilepsy diagnose and he suffered from seizures multiple times a week.

Participant B was a female in her 40s with severe intellectual disabilities. Her muscle functioning was hindered and hence a wheelchair was always used. Furthermore, she had a history of psychiatric complications which affected her well-being as well as communication. During her psychotic periods she tended to be more anxious and

scream more in comparison to her non-psychotic behaviour where she usually was calm and quiet. Participant C was a male in his late 50s with profound intellectual disabilities. Participant C's muscle functioning was intact and during therapy sessions he often switched his positioning. It also occurred a few times that he walked away from the scenario. The communication of all three participants lied between the stages of 1 and 5, as shown in table 1 (Bates et al., 1979; Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987).

Before the HOP therapy began the researcher interviewed the participants' personal caregivers about the participants' health condition, social behaviour, communication, what they enjoyed doing and other information relevant for the therapy. The researcher did also obtain written consent to access all the participants' official medical records. One of Sheridan Forster's goals (2008) was to educate and spread knowledge to people who work with persons with PMID in how to create meaningful interaction with them. As one of the researcher's goals was to inspire the caregivers to continue with the HOP model in their work with persons with PMID, information was given to them after the finished therapy period about the model as well as how the therapy with the client in question had proceeded. Included in this briefing was approaches that worked well in creating interaction with that specific client and what had not worked equally well. It was also discussed how the caregivers could proceed with the HOP model and how they could incorporate it in different work situations.

2.3 Data collection

An experimental study with a multiple-case design was conducted. Three clients were given 20 sessions of the HOP therapy treatment, during a period of four weeks (on Saturdays and Sundays therapy was not conducted). The sessions were carried out in the participants' personal rooms. Each session was video recorded to enable prospective meticulous coding of the participants' social engagement. A Canon Legria HF M307 was used for the recordings and the program VLC media player version 2.2.8 to view them on the computer.

Table 2
Total and mean length of HOP therapy sessions coded for each participant

Participant	Total length of sessions analysed (h:m:s)	Mean length of one session (m:s)
Client A	02:40:23	08:01
Client B	03:16:17	09:49
Client C	02:56:56	08:51

Note. h= hours; m= minutes; s= seconds

The aim was to conduct 10-minute sessions every day, however, due to variations in the client's health conditions the sessions varied between three and ten minutes. As described in table 3, a session was ended before the intended 10 minutes if a client a) fell asleep and slept for more than four continuous minutes; b) walked away and did not come back during a period of four minutes; or c) the researcher assessed the clients' energy level to be too low for the session to continue. If the client fell asleep or walked away for more than 30 seconds but returned his focus on the researcher before a period of four minutes, it was counted as a natural break, which was not coded (coding continued when the client came back from the natural break). If the client suffered from an epileptic seizure while the therapy was conducted, the session was not included in the analysis.

Table 3
Guidelines used to determine natural breaks and ending of a session

Session ended	Natural break
Client sleeping for four continuous minutes or more	Client falling asleep for at least 30 seconds, but refocusing on the therapy before a period of four minutes
Client walking away for four continuous minutes or more	Client walking away for at least 30 seconds, but refocusing on the therapy before a period of four minutes
Researcher assessed the client's energy level being too low to continue	

2.3.1 Coding & analysis

The variables and the coding design were inspired from Zeedyk, Caldwell and Davies's (2009) study, where they analysed the effect of intensive interaction on similar participants as in the present study. In their study, they chose four variables to observe. These variables were eye gaze, bodily orientation towards the communication partner, proximity from the partner and emotional valence. The aim of the coding was to be able to assess the participants' social engagement throughout the therapy. In the current study, only three variables were chosen to function as indicators of the participants' social engagement: eye gaze, orientation and a new variable vocal was added. The variable eye gaze was chosen in this study because it is considered to be the first and essential step for all human communication (Nettelbladt & Salameh, 2007). Some minor changes were made to the variable orientation, which was coded as the orientation of the participants head, not the entire body. This decision was made since two of the participants were sitting in wheelchairs and had severe tension, cerebral palsy or paresis which caused movement of their bodies highly unlikely and therefore a misleading variable. Proximity was excluded completely for the same reasons as in the bodily orientation. Emotional valence was excluded, since it was considered to be a difficult variable to analyse correctly. Vocals were added because of its importance in the preverbal stages of communication (Nettelbladt & Salameh, 2007), and due to inspiration from Watson and Knight's (1991) study. Each of these variables had three hierarchical levels that represented the degree of social engagement (table 4). For further calculations each level was given a certain value, a= 0, b =0,5 and c = 1. Assessment of the participants' total time spent at each level were made through analysis of the video recordings (Zeedyk, Caldwell & Davies, 2009).

Table 4

Variables and their levels used for assessment of the participant's social engagement

Eye gaze	Orientation	Vocals
(a) away from partner	(a) away from partner	(a) no vocals
(b) towards partners body	(b) towards partners body	(b) vocals
(c) towards partners face	(c) facing partner directly	(c) interaction

Note. Associated values for further calculations were a) = 0; b) = 0,5; c) =1

Eye gaze was coded as either a) away from partner; b) towards partner's body or c) towards partner's face. Level a) indicated a low level of social engagement, b) a higher level of social engagement and c) the highest level of social engagement for this specific variable. The same hierarchical order can be transmitted to the other two remaining variables; orientation and vocals. Orientation was similarly coded as eye gaze, with the different levels being a) away from partner; b) towards partner's body or c) towards partner's face.

The last coded variable included in this study was vocals, also with three different levels; a) no vocals, b) vocals and c) interaction. Every sound made with the intention of communication by the participant was coded as interaction. Communicative sounds included vocalized turn-taking or imitation between the participant and the researcher. If a pause of seven seconds or more occurred between the turns, the next turn was not counted as a response. Sounds that the participant made that was not within the timeline of counting as an interaction, completely out of context or seemingly without a communicative intent was coded as vocals.

All coding started at the beginning of every session (0.0), and stopped when the session reached 10.00 minutes or when the researcher cancelled the session due to the participant being too sleepy, in pain or unfocused. Natural breaks were not coded. As in Zeedyk et al's. (2009) study, each behaviour was coded separately and with a standard microanalytic procedure. To be able to analyse a variable the researcher noted every time there was a change in the level of social engagement. For example, the pattern of a participant's eye gaze might have been: at 0.0 seconds away from partner, at 0.12 seconds towards partner's body, at 0.17 seconds towards partner's face, at 0.20 seconds away from partner. At the end of every individual session, the researcher summed the total time spent at each level of engagement for all variables. Furthermore, these sums were converted into a percentage value (appendix B), to be able to see how many percent of the session the client used eye gaze, orientation and vocals.

The collected data were then converted into an engagement index score for each session and each variable separately to enable further analysis of the HOP treatment effect (Zeedyk et al., 2009). Calculations were used to convert the percentage of time spent at different levels during a session into the engagement index score. The engagement index score ranged between a value of 0 and 100, where higher scores indicated more social activity from the participant. Using this

score made it possible to compare results of different therapy sessions even though the length of them varied.

The first step in the calculation of the engagement index score was to assign the values 0, 0.5 and 1 to the associated variable levels. The values reflect the hierarchical nature of the levels, where 0 represents the lowest social engagement, 0.5 the second highest social engagement and 1 the highest social engagement (Table 4 notes). The second step consisted of multiplying the percentage data from each session (appendix B) with the associated value of 0, 0.5 or 1. In the final step, the outcomes were summed to create an overall engagement score index for the session (table 6). As mentioned earlier, this was done separately for every variable, eye gaze, orientation and vocals.

Both visual and qualitative approaches were conducted to analyse the results of each participating client. A qualitative approach where mean scores were compared, was chosen over quantitative one due to the low number of participants, which would generate non-reliable statistical outcomes. Visual results were shown with graphic tables, to facilitate the qualitative analysis.

Table 5

An example of the calculation process for the social engagement index score

Participant	Session	Variable	Level	%	Value	Calculation	Score	
Client A	S1	Eye gaze	Away	78.25	0	78.25 x 0	0	
			Body	4.67	0.5	4.67 x 0.5	2.34	
			Face	17.07	1	17.07 x 1	17.07	
								19.41
		Orientation	Away	0.00	0	0 x 0	0	
			Body	100.00	0.5	100 x 0.5	50	
			Face	0.00	1	0 x 1	0	
								50
		Vocals	No vocals	100.00	0	100 x 0	0	
			Vocals	0.00	0.5	0 x 0.5	0	
			Interaction	0.00	1	0 x 1	0	
								0

Note. % = seconds spent at each variable level converted into a percentage. Score = social engagement index score.

3 Results

3.1 Inter-rater reliability

The author coded all the video recordings and to measure inter-rater reliability a qualified speech and language pathologist coded 10% of the recorded therapy sessions. The second rater was an independent observer and coded the variables eye gaze, orientation and vocals in a total of six videos. Two videos were randomly chosen from each of the three clients to make an even distribution. The chosen method to measure inter-rater reliability was intraclass correlation coefficient (ICC). The computer program IBM SPSS statistics 24 was used to conduct the calculation. The results showed that the intraclass correlation on average measures between the two observers was 0.619 and 95% $CI = 0.025 - 0.855$. According to Landis and Koch (1977), a coefficient between 0.60 and 0.74 indicates a good level of clinical significance.

3.2 Assessment

It was decided to use qualitative approaches to interpret the results from the research. Statistical analyses would not have been reliable due to the small sample size of the study and were therefore excluded. There were also no baseline measurements to compare the later measurements with. Client A, B and C's social engagement index scores for all therapy sessions and variable levels are presented in table 6. Further analyses were made individually for all three clients. To visualize and look for possible changes in social behaviour during the therapy periods all social engagement index scores for every therapy session were put into graphs (one graph per client). To further analyse the data the therapy sessions were distributed into four segments, each segment consisting of five therapy sessions (table 6). This enabled the researcher to compare the level of the clients' social behaviour during different parts of the therapy period. Mean scores were also calculated for each segment. A graph was also made for each client showing the difference between the social index score between segment one and segment four (separately for every variable). Doing so enabled clearer visual information about the changes of the social behaviour from the beginning to the end of the therapy.

Table 6
Social engagement score index for client A, B and C

Client	Variable	Therapy sessions									
		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A	EG	19.41	22.58	26.67	26.81	40.75	29.20	47.47	81.24	16.21	27.02
	OR	50.00	4.00	28.58	50.00	63.42	36.55	36.71	54.72	30.00	26.28
	VO	0.0	5.0	0.33	1.94	0.08	9.16	0.0	10.81	19.81	11.06
B	EG	9.17	24.17	20.17	19.83	22.81	7.92	40.17	28.50	23.58	42.00
	OR	9.42	29.75	0.0	29.75	24.54	14.25	58.00	21.33	21.83	47.17
	VO	0.42	0.0	0.0	0.0	21.35	6.92	1.92	15.75	2.25	6.08
C	EG	10.58	7.17	6.42	28.42	54.73	44.92	56.13	21.24	40.00	35.17
	OR	25.42	13.42	10.17	40.33	61.94	58.58	2.92	36.56	27.25	33.63
	VO	15.83	12.58	8.00	12.00	8.39	17.25	12.94	8.06	14.25	16.46

Note. S1-S10 = Therapy session 1-10. EG = eye gaze. OR = orientation. VO = vocals.

Table 6 (continued)
Social engagement score index for client A, B and C

Client	Variable	Therapy sessions									
		S11	S12	S13	S14	S15	S16	S17	S18	S19	S20
A	EG	55.12	66.75	39.67	58.87	17.37	54.26	61.31	- ^a	38.15	48.75
	OR	52.99	62.50	39.00	33.25	22.65	50.39	50.93	-	17.77	50.75
	VO	21.53	16.00	5.50	0.12	11.15	19.09	12.82	-	0.57	13.00
B	EG	34.50	38.33	27.00	31.08	40.33	34.25	28.92	30.25	16.67	50.00
	OR	46.83	40.67	34.58	39.00	25.83	38.58	28.17	30.33	11.75	64.58
	VO	0.83	0.0	9.33	0.0	0.17	2.00	1.67	0.0	0.0	0.17
C	EG	19.75	7.67	22.14	32.17	35.00	25.50	31.75	51.75	15.32	34.25
	OR	21.92	29.58	32.14	25.58	33.42	7.45	38.08	62.25	37.90	53.25
	VO	16.08	9.42	13.04	8.75	5.67	15.40	12.42	21.25	10.22	19.00

Note. S11-S20 = Therapy session 11-20. EG = eye gaze. OR = orientation. VO = vocals.

^a Social index value excluded because of epileptic seizure during the session.

3.3 Client A

The graph in figure 2 displays all the social index scores of the measured variables over the course of the whole therapy period. The graph illustrates fluctuations in the results, with many high versus low scores. Therapy session 18 was excluded because the client suffered from a seizure, which was a component negatively affecting the validity of the result from that session. It can also be noted that client A most frequently used eye gaze and bodily orientation as his communicative acts rather than vocals.

Table 7

Social engagement score mean rate for each variable during client A's therapy segments

Participant	Variable	Segment 1	Segment 2	Segment 3	Segment 4
Client A	EG	27.04	40.22	47.55	50.61
	OR	39.02	36.85	42.07	42.46
	VO	1.47	10.16	10.86	11.37

Note. EG = eye gaze. OR = orientation. VO = vocals. Segment 1= therapy sessions 1-5, segment 2= therapy sessions 6-10, segment 3= therapy sessions 11-15, segment 4= therapy sessions 16-20.

According to the mean rate of the social engagement index score for the variable eye gaze, the use of this communicative act was the lowest in segment 1 (27.04) and highest in segment 4 (50.61) (Table 7). This indicates that the client gradually increased his communication by looking more at the researcher's body and/or face throughout the therapy. A comparison of the mean score of eye gaze in segment 1 and segment 4 can be seen in figure 1 and visualizes how the use of eye gaze increased from the beginning to the end of the therapy. It was calculated that the total increase in the social index mean score between segment 1 and 4 was 23.57.

Orientation was fluctuating less than the eye gaze variable for client A, with a mean rate of social engagement 39.2 in segment 1 and 42.46 in segment 4 (Table 7). A small decrease in the communicative function of orientation was observed in segment 2, however, in the last two segments the social engagement score was increased again. In figure 1, it is observable that the social engagement index score of orientation between segment 1 and 4 had a slight increase, with a total gain of 3.26 scores from the beginning to the end of the therapy. In conclusion, client A had a

small increase in his bodily orientation during the therapy; however, in this case it was decided to be analysed as no change due to the very slight score increase.

The graph in figure 2 displays that the third variable, vocals, is the least used communicative act by client A. An overall increase during the therapy period could, however, be observed when the four segments were compared to each other (table 7). The mean rate of the social engagement index score for the variable vocals was only 1.47 in segment 1 and 11.37 in segment 4. In figure 1 the means for segment 1 and 4 are comparable, with a total increase of 9.9 scores from the first segment to the last segment.

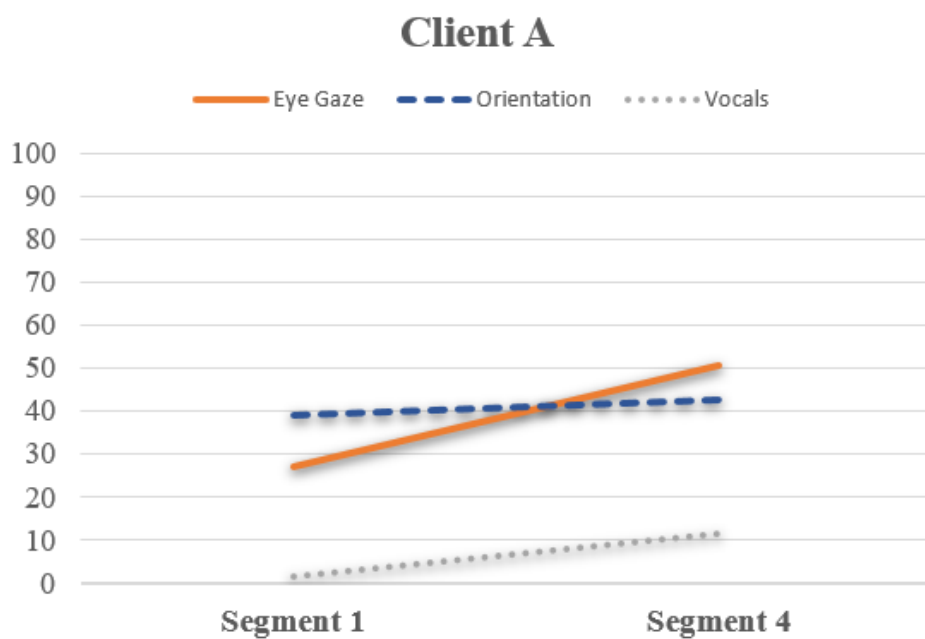


Figure 1. A comparison of Client A's mean score of social engagement during segment 1 and 4

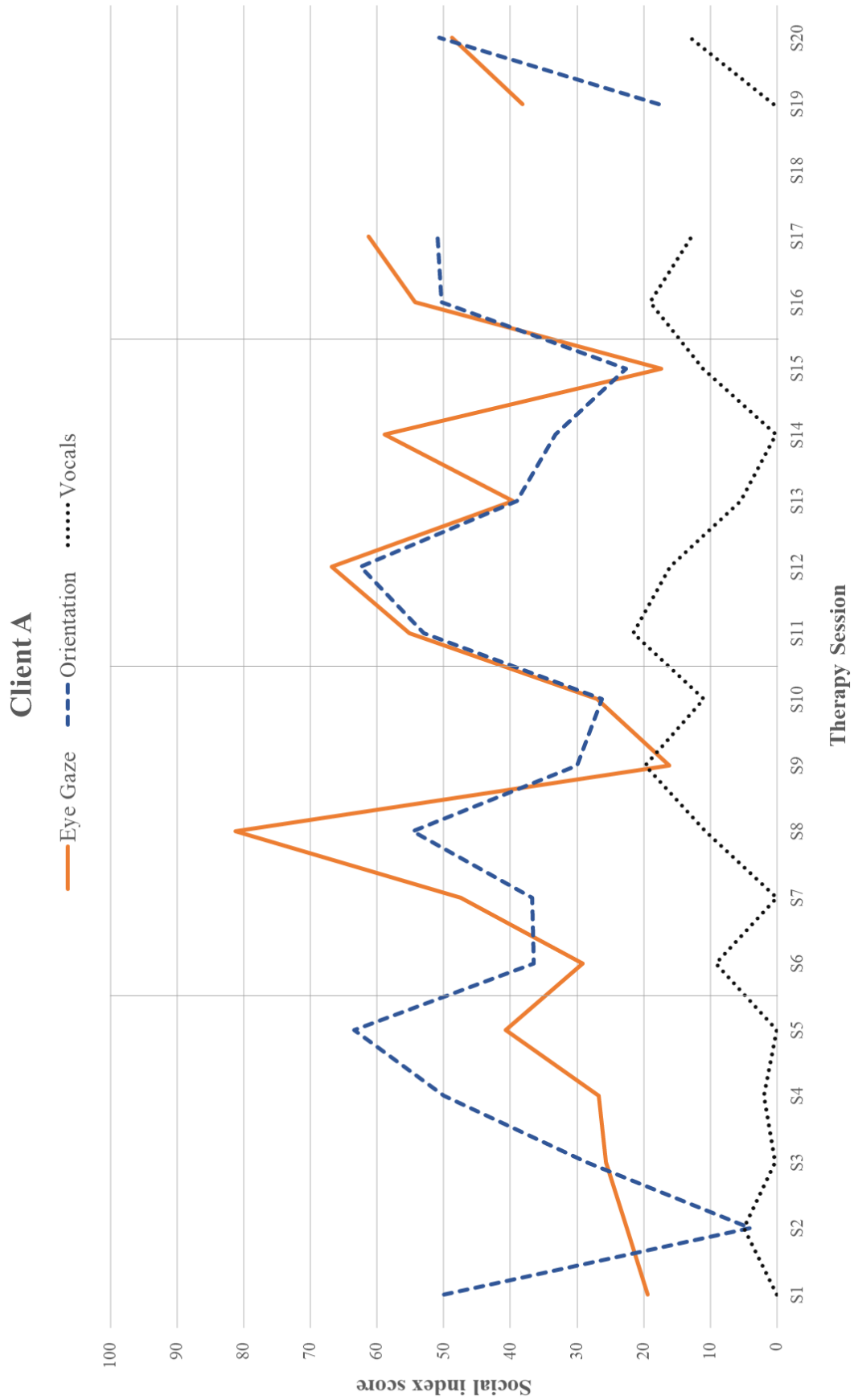


Figure 2. Client A's social engagement index scores for all variables from therapy session 1-20. The results from therapy session 18 were excluded from the analysis due to epileptic seizure.

3.4 Client B

Client B's social engagement index scores for all three variables during the therapy period can be seen in figure 4. The graph (figure 4) for client B has less fluctuations compared to the graph (figure 2) of client A. Fewer extreme high versus low scores suggests a steadier use of different communication acts from the client. The graph also suggests that client B mostly uses eye gaze and bodily orientation as communicative acts, whereas vocals are rarely used.

Table 8

Social engagement score mean rate for each variable during client B's therapy segments

Participant	Variable	Segment 1	Segment 2	Segment 3	Segment 4
Client B	EG	19.23	28.43	34.24	32.01
	OR	18.69	32.51	37.38	34.68
	VO	4.35	6.58	2.06	0.76

Note. EG = eye gaze. OR = orientation. VO = vocals. Segment 1= therapy sessions 1-5, segment 2= therapy sessions 6-10, segment 3= therapy sessions 11-15, segment 4= therapy sessions 16-20.

Client B's mean rate scores of social engagement for the variable eye gaze were 19.23 in segment 1 and 32.01 in segment 4 (table 8). The total increase from segment 1 to segment 4 was calculated to be 12.78 scores. This indicates an increase in the client's use of eye gaze as a communicative act. Observable is that the highest mean score took place during segment 3 (34.24) with a slight decrease to segment 4 (32.01).

The mean rate scores for the variable orientation were 18.69 in segment 1 and 34.68 in segment 4 (table 8). The total increase in the social engagement score from segment 1 to segment 4 was 15.99. From the graph in figure 4, it is evident that the two variables eye gaze and orientation seem to correlate with each other, meaning that if one is low the other one also has a lower score. In the variable orientation, it is also noticeable that the highest social engagement index score was during segment 3, the same pattern that was found in the variable eye gaze. In figure 3, it is also distinguishable that the two variables almost have the same pattern of increase from segment 1 to segment 4.

The third variable, vocals, followed a different pattern than the first two, with very low scores throughout the whole therapy. The mean rates of social engagement for the variable vocals were 4.35 in segment 1 and 0.76 in segment 4 (table 8). Another factor that differentiates vocals from the other two variables is the fact that it decreases from the beginning to the end of the therapy period. This can also be noted in figure 4, where segment 1 and 4 are compared to each other. The total amount of decrease in the social engagement index score in vocals from segment 1 to 4 was calculated to be -3.59.



Figure 3. A comparison of Client B's mean score of social engagement during segment 1 and 4.

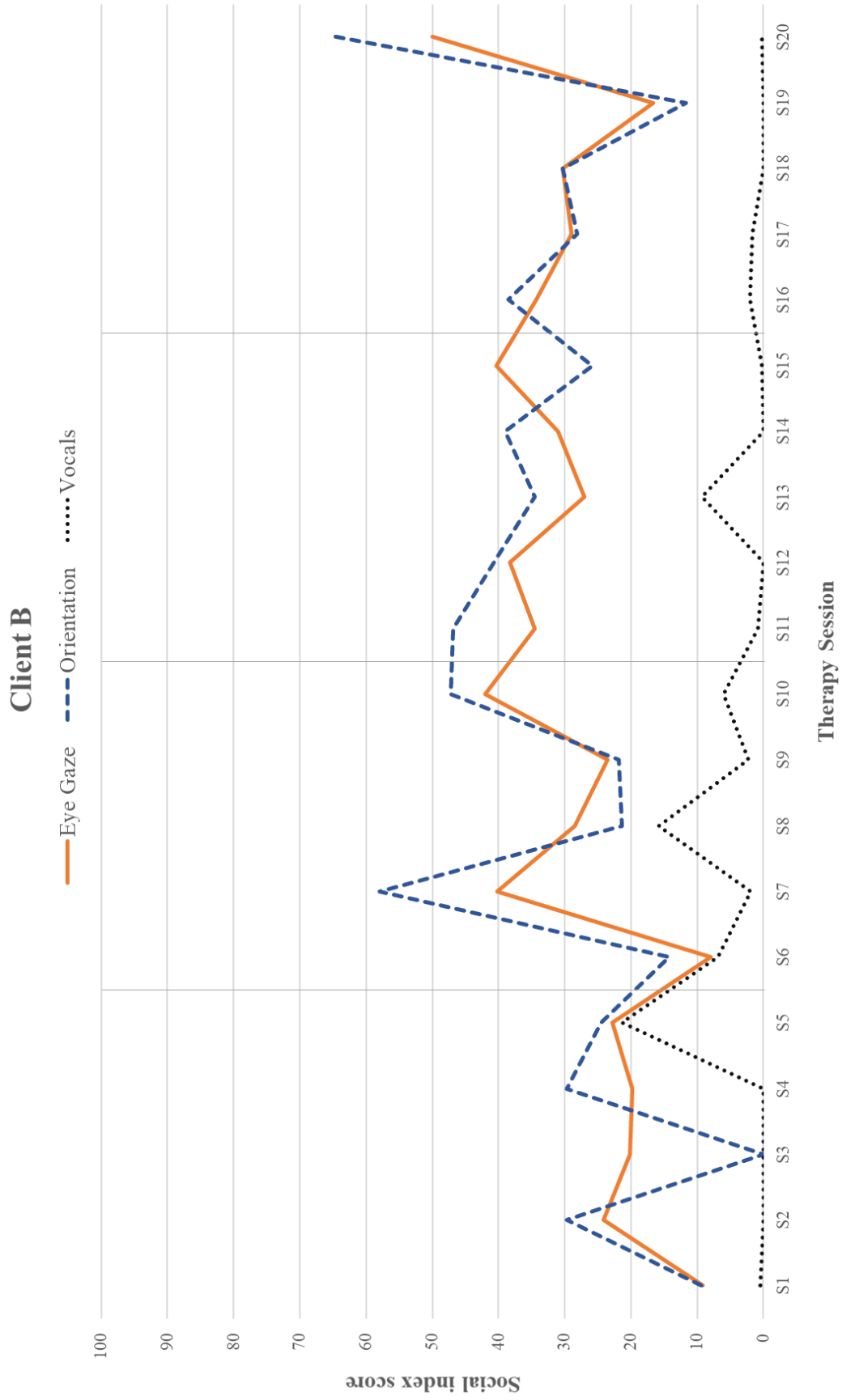


Figure 4. Client B's social engagement index score for all variables from therapy session 1-20.

3.5 Client C

The amount of social engagement of client C during all therapy sessions can be seen in figure 6. Overall, some bigger fluctuations can be seen in both variables eye gaze and orientation, whereas vocals have fewer variations. Vocals is also a less used communicative act compared to eye gaze and orientation. Observable higher scores of eye gaze and orientation are seen in the transition of segment 1 and 2 as well as during segment 4. Figure 6 visually presents that the increase of social engagement from segment 1 to 4 in variables eye gaze and orientation is linear when compared to each other.

Table 9

Social engagement score mean rate for each variable during client C's therapy segments

Participant	Variable	Segment 1	Segment 2	Segment 3	Segment 4
Client C	EG	21.46	39.49	23.34	31.71
	OR	30.25	31.78	28.58	39.78
	VO	11.36	13.79	10.59	11.86

Note. EG = eye gaze. OR = orientation. VO = vocals. Segment 1= therapy sessions 1-5, segment 2= therapy sessions 6-10, segment 3= therapy sessions 11-15, segment 4= therapy sessions 16-20.

Client C's mean rate of social engagement for variable eye gaze was 21.46 in segment 1 and 31.71 in segment 4 (table 9). The total increase from segment 1 to 4 was 10.25 scores and is visually presented in figure 6. The lowest use of this variable occurred in segment 1, however, the increase of eye gaze is not linear along the therapy period. The usage of eye gaze has some fluctuations, with the highest mean score during segment 2.

The mean rates of the variable orientation for client C were 30.25 in segment 1 and 39.78 in segment 4 (table 9). An increase of 9.53 index scores from segment 1 to 4 can be derived from the data, which indicates that the client has oriented his body more towards the researcher's body and/or face at the end of the therapy than in the beginning. A slight decrease in the mean index score can be observed during segment 3.

Client C's usage of vocals has few high versus low mean scores, which indicates a very small or no change in this act during the therapy. The mean rates for client C's vocals were 11.36 in segment 1 and 11.86 in segment 4 (table 9). The change between segment 1 and 4 was very small, 0.5 scores. This is visually presented in figure 6, where the line showing the possible change in the variable is straight.

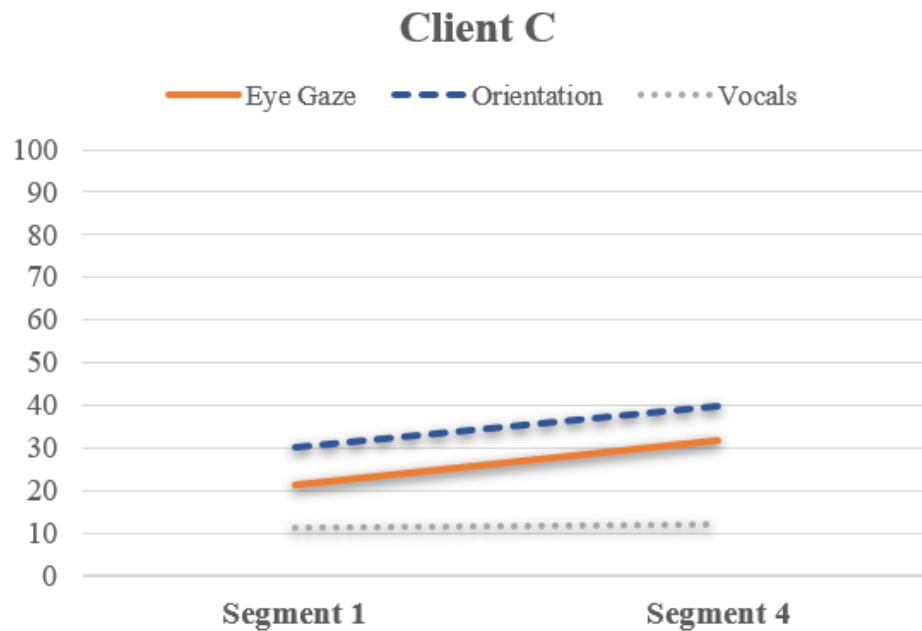


Figure 5. A comparison of Client C's mean score of social engagement during segment 1 and 4.

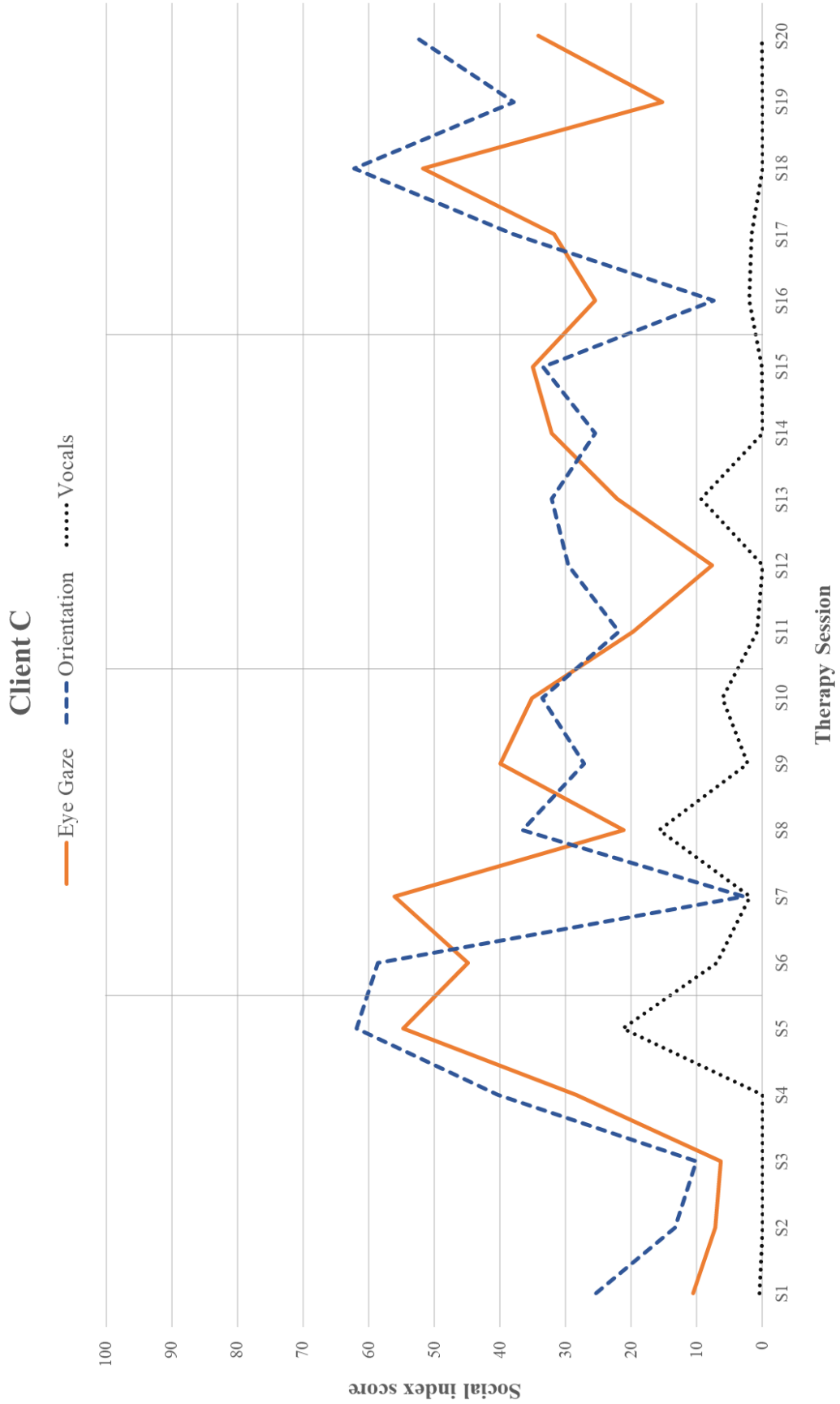


Figure 6. Client C's social engagement index score for all variables from therapy session 1-20.

4 Discussion

The present study examined if the use of communicative acts among three adult participants with profound intellectual disabilities would change during a period of HOP therapy treatment. The clients received a total of twenty individual HOP therapy sessions during a four-week period. In many studies, it has been shown that intensive interaction is effective in promoting social engagement in persons with PMID (Coia & Handley, 2008; Leaning & Watson 2006; Nind 1996; Nind & Kellett 2002; Watson & Fisher 1997). Noteworthy in this study was that variations occurred in the usage of the communicative acts during different therapy sessions. This was possibly due to the activity level of the participants, which also varied from day to day. Because of this, it was decided that the researcher analysed the possible changes in communicative acts in four sequences instead of 20 different measuring points.

According to Nettelbladt and Salameh (2007), eye gaze is very important in early communication, possibly being a driving force behind humans' interest in faces (Gliga & Csibra, 2007). Eye gaze is also a guiding tool for learning (Striano & Reid, 2006), and a way for the infant to obtain significant information before the acquisition of vocal language (Hood, Willen & Driver, 1998; Langton, Watt & Bruce, 2000). Among all three participants, the communicative act eye gaze was the most frequently used communicative act during this study. An increase in the social engagement variable eye gaze occurred in all three participants. Orientation was the second most used communicative act and an increase in the usage of this act occurred in two of the participants during the therapy period. Vocals was the least used communicative act among all participants during the whole therapy session.

Infants typically receive a response from an adult when they begin to use vocals and this kind of communication happens in a repetitive manner. It might be that persons with PMID do not obtain this response early enough from their caregivers or in a sufficient amount and, therefore, do not learn the uses of vocals in a communicative way like infants usually do. The production of vocals is also more complex than for example eye gaze, which is a relatively simple processing mechanism in the human brain and only involves movement of one body part (Anstis, Mayhew & Morley, 1969; Baron-Cohen, Wheelwright, Hill, Raste & Plumb,

2001). This complexity may be a participating factor in why vocals was the least used communicative act. One of the clients had an increase in the communicative act vocals, whereas one client had a decrease, and another remained unchanged. In conclusion, all three participants showed an increase in most of the communicative acts from segment 1 (session 1-5) to segment 4 (session 16-20). However, the results could not be statistically tested due to the small sample size and lack of baseline measurements.

The results of this study coincide with the results of similar studies. For example, in Whittington and Alexander's (2001) study about therapy following the guidelines of intensive interaction, analyses indicated a positive change in several observable interactive behaviours across all participants. A study made by Watson and Knight (1991) about intensive interaction showed increased levels of eye contact and vocalization, results that were also found in this study. Similar results as Lovell et al's. (1998) were also found, where increased frequency of vocalisation was measured after a period of intensive interaction.

4.1 Client A's intervention

Client A showed an increase of usage in two of the three communicative acts, eye gaze and vocals, during the HOP therapy treatment. The most frequently used acts during the therapy period were eye gaze and orientation and the least used was vocals. A factor that made the variable eye gaze a little problematic to analyse was that the client suffered from strabismus (eyes do not properly align with each other). In other words, one of the client's eyes could be gazing towards the researcher's face simultaneously as the other gazed against the researcher's body. The measurement of the eye gaze could be less valid because of this.

Turn taking between client A and the researcher using physical objects was not possible due to his decreased muscle functioning and rigidity in arms and hands. Further implications on his muscle functioning required the usage of a wheelchair, or the bed. The client sat most of the therapy sessions in his wheelchair, however, a few sessions took place when he was lying on the bed. The times he lay on the bed might have skewed the variable orientation to some degree, since his head movements were not achieved as easily as they were while sitting in the wheelchair.

The client suffered weekly from epileptic seizures. When these seizures occurred, it made him significantly more fatigued than during the days when he did

not have a seizure. The fatigue was a factor that could possibly have affected the results of the therapy sessions in a negative way. Therapy session 18 was excluded from the data because of the client suffering from an epileptic seizure during the session.

Choosing the optimal time during the day for therapy sessions with client A played an important role. His moods and fatigue periods varied slightly from day to day, however, according to his personal caregiver, a session after his morning routines was considered the best. Afternoon sessions were not as optimal since the client often was not as energetic and needed his daily naps. In this study, 16 of the therapy sessions were conducted in the morning and four in the afternoon for practical reasons. A slight change in the client's energy levels could be noticed in the afternoon sessions compared to the morning sessions. He was seemingly more tired in the afternoon.

Another factor that could have affected not only the treatment, but also the analysis of the vocals from the video tapes, was that the therapy sessions took place in the client's own bedroom. The bedroom was partially shared with another client who was very vocal during some sessions. The sound might have been distracting for client A and therefore affecting his social behaviour during the therapy session. During the video tape analyses, it was sometimes difficult to distinguish which vocals were made by client A and which ones by his roommate. Especially for the independent observer who participated in the inter-rater analysis, it could have been more difficult to distinguish which vocals belonged to whom, since that observer did not know the client as well as the researcher performing the HOP treatment.

Physiological symptoms occurred during a few therapy sessions that might have affected the outcome. The client seemed to have stomach pains (or possibly other physical pains) which seemingly made him anxious and distressed. This could be seen from his facial expressions and how the vocals changed in pitch.

4.2 Client B's intervention

Client B increased the usage of eye gaze and orientation but decreased the usage of vocals. The client frequently used eye gaze to follow every new situation in her presence and to make contact with the researcher. This client had hindered mobility and because of that she sat in a wheelchair during all therapy sessions. An effective way of creating interaction with client B was to imitate her leg movements. She often

lifted one of her legs, which was a movement that the researcher could imitate. Through mirroring this behaviour, turn taking could take place. This play of turn taking sometimes developed into more physical interaction and closer proximity where the client could touch the researcher's foot with her foot and vice versa. This coincides with what Hostyn et al., (2011), Lancioni et al., (2005) and Mellstrom et al., (2005) mention in their work, where they all noted that initiation of tactile methods is important in creating joint attention.

The wheelchair was also a reason why orientation was measured in accordance with the head and not the body. Turn taking with physical objects was not possible with client B. She did not move her left arm at all, and the other arm she often used to carry out an obsessive-compulsive movement with. This movement took the form of touching the right side of her head back and forth. Occasionally during the therapy sessions, she stopped the movement, but she rarely lowered her arm. A few times during segment 3 and 4 she lowered her right arm and held it in her lap. The obsessive-compulsive arm movement was not mirrored to initiate interaction, because the researcher considered it to be a self-destructive pattern.

Client B had a history of psychiatric health disorders. According to the client's personal caregiver, psychotic behaviour in the client could especially unfold during spring time. During these psychotic periods, she was more restless physically (more obsessive-compulsive movements of her arm) and used loud voicing. The HOP therapy period in this study took place during the beginning of spring. During this period, a few times occurred when the client had been sent home earlier from her workplace due to excessive screaming and restlessness. The screaming also took place at her own care unit. This behaviour matched the behaviour described as her psychotic symptoms. The qualitative analyses made on her social engagement index score in the present study indicated that her vocals decreased during the HOP therapy period. In other words, she used more vocals during the first segment of the therapy period than during the fourth segment. One way to interpret these results could be that intensive interaction during the therapy session calmed her down and decreased the excessive vocalisation.

4.3 Client C's intervention

Client C had an increase in two out of three measured communicative acts. The communicative act vocals remained unchanged. Unlike client A and B he was very

mobile and therefore able to both initiate closer physical interaction but also to walk away completely from the session. Noted during the therapy period was that one of client C's primary ways of seeking contact was physical proximity. He often took my hand and placed it on his own head, face or chest and moved it in a motion he enjoyed.

Client C also had strabismus (uneven eye alignment) which may have affected the analysis of his eye gaze. Another factor that made the analysis of eye gaze more difficult was that he often kept his eyes half shut, which made it difficult for the researcher to see in what direction he was looking or if he was looking at all. Another factor that made the HOP therapy more of a challenge was that client C rarely paid attention to physical objects the researcher presented to him to initiate turn taking or joint attention. He was also fatigued quite often for unclear reasons, falling into short slumbers every now and then when he had found a comfortable position in the researcher's lap.

Client C was very mobile and walked around in his care unit to find different resting spots during the days. Since he so often moved around, it was decided that there would not be a specific place where to have the therapy sessions, but rather have them wherever he resided when the researcher came to visit. This was something that could have affected the outcome of the therapy results to some degree. Other clients living in the same care unit as client C could some days be very vocal, which made the vocal analysis from the video more difficult (as in distinguishing which sounds that came from client C and which that came from neighbouring clients).

4.4 Limitations of the study

Due to the single case study and lack of statistical analysis, the results of this study cannot be directly applied to a larger population. Although the results of this study showed an increase in the majority of the communicative acts, the study needs to be replicated with more participants. It would also be preferable to use a baseline measurement to allow statistical analyses to be made of the results.

The non-consistency of the research environment and different background noises are limitations that need to be considered as well when interpreting the results of this study. Having the same therapy setting for all clients would have been optimal for the research, however, due to the clients' mobility and the fact that they lived on

different care units made this more difficult to implement. Sound isolation was not accessible due to building environments. Another limitation of the study was the video recording quality. The placement of the camera and the lightning varied from session to session and in some cases these factors made the later video analyses difficult. Especially the variable eye gaze was difficult to analyse if the lightning or camera setup was not optimal.

When the researcher started this study, she had only met the clients once before. Some change in their communicative acts might therefore have been a result of the client and the researcher getting to know each other better, rather than the therapy model itself. This could have been avoided if the researcher had spent more time with the clients before the actual therapy period started.

4.5 The complexity of communication in persons with PMID

As noted earlier by Grove et al. (1999), communication is a challenge when working with persons with PMID. This complexity often arises due to the nature of their multiple disabilities and health issues (Bruce, Godbold & Naponelli-Gold, 2004; Crais & Roberts, 1996). Up to 85% of persons with PMID suffer from visual impairments (Van Splunder, Stilma, Bernsen & Evenhuis, 2006) and this affected two of the clients in the present study. Furthermore, the visual impairments possibly affected the communication through eye gaze, making it more complex. According to Lhatoo and Sander (2001), 50% of persons with PMID have epilepsy. One of the participating clients in this study was repeatedly affected by this medical condition, adding to the complexity of the communication with this person.

One of the reasons for these communicative issues, according to Wilder and Granlund (2003), is that persons with PMID show very subtle acts of communication to express themselves, which easily causes interpretation difficulties or is completely unobserved by potential communicative partners. This was confirmed by the researcher when analyses of the video recordings were made. After watching the video recordings several times, the researcher could observe some communicative cues (for example eye gazing or bodily movements) made by the client which were not noted by the researcher during the actual therapy sessions.

Even though these clients had all similar diagnoses, they had big differences between each other. The statement made by Hogg et al. (2001) and Petry & Maes (2006) that different communicative acts do not only differ between persons but can

also hold different meanings for different situations for the same person could be backed during this study. Furthermore, these individualities made it difficult to choose three variables that equally well resembled their communicative interaction. Perhaps every variable should have been chosen individually to the participants, rather than using the same variables for everyone, to obtain the most accurate results of the HOP therapy period. For example, some of the clients had severely hindered mobility, whereas one had not. This made the variable orientation more complicated to analyse than if every one of the participants had been mobile or vice versa. Another example is the variable vocals, which arguably could be a positive way of communicating as well as a sign of distress depending on the person. In such a case the analysis of that variable would be skewed if it was interpreted the same way for all clients.

The communication of people in the preverbal stage follows a similar pattern, however, everyone has his or her own differences. One of the most important things in HOP therapy is about adapting one's communication to the clients' and being flexible in the way we communicate. This is supported by Nind and Hewett (2001) who note in their work that the person with PMID and the practitioner together with the help of intensive interaction develop techniques to achieve a qualitative relationship and interaction. It is also important to remember to always take other present diagnoses into consideration when communicating with a person with PMID. In this study, complications such as severe tiredness, fatigue, physical pain, anxiety and restlessness were often occurring symptoms due to other illnesses, which probably affected the communication during the therapy sessions as well as the outcome in general of the therapy period.

4.6 Conclusion and future research

From the results of this study, it can be said that the HOP therapy treatment shows promising results in increasing communication acts in people with PMID and that individuality among clients as well as flexibility should be taken into consideration when giving HOP therapy.

Future research about this topic could include more in-depth studies about the HOP therapy treatment. For example, if it affects problematic behaviours in clients such as aggressive tendencies, the clients' well-being in general, if the effects persist and how it affects the caregivers using this model. Communication is important for

every human being and persons with PMID are no exception. More research and therefore knowledge in this subject would, hopefully, be a step further towards improving the quality of life of many persons with PMID.

Swedish summary – Svenska sammanfattning

Effekten av en HOP-terapiperiod på preverbala kommunikationsförmågor hos vuxna personer med grav psykisk utvecklingsstörning – en multipel singel-subjekt-studie

Introduktion

Kommunikation är viktigt för alla individer, och personer med GMPU är inget undantag. På grund av att grav utvecklingsstörning har en komplex natur uppstår emellertid ofta kommunikativa komplikationer, och meningsfull och funktionell kommunikation kan vara ett problem för personer med GMPU (Ayyıldız, Akçin & Güven, 2016). Enligt World Health Organization (1992) har personer med diagnosen F.73 grav psykisk utvecklingsstörning en IQ på 20 och mental ålder under 3 år. Detta leder till begränsningar i självvård, självkontroll, kommunikation och mobilitet. Det är därför viktigt att vårdare som arbetar med personer med GMPU har kunskap om kommunikativa beteenden och handlingar som är typiska för den preverbala perioden. Att ha expertis inom det området hjälper potentiella kommunikationpartner att förstå och interagera på ett adekvat sätt med personer med GMPU (Rowland & Schweigert, 2005; Rowland & Stremel-Campbell, 1987).

Grunderna i preverbal kommunikation är social interaktion, delad uppmärksamhet och reglerat beteende (Mundy et al., 2003; Mundy & Stella, 2000; Tomasello, 1995; Topbaş, Maviş & Erbaş, 2003; Westling & Fox, 2004). Reglerat beteende hjälper spädbarnet att uttrycka obehag, välbefinnande, fysiologiska behov eller intressen och kan uttrycka sig i form av gråt, leenden, kroppsliga rörelser, ansiktsuttryck och gester (Brady, Steeples and Fleming, 2005). Ett av spädbarnets första sätt att kommunicera är med hjälp av skriket, som är ett symptom på hunger, trötthet eller smärta (Nettelbladt & Salameh, 2007). Gradvis börjar spädbarnet göra olika ljud för att uttrycka välbefinnande, som sedan utvecklas till joller. Ett spädbarns ljudande anses vara ett symptom på besvär eller välbefinnande, som sedan blir en signal då spädbarnet kommunicerar till sin omgivning (Nettelbladt & Salameh, 2007). Ögonkontakt är lika viktigt som skriket och etableras mellan omhändertagaren och spädbarnet en kort tid efter födseln. Ögonkontakt är ett

essentiellt steg för all mänsklig kommunikation (Nettelbladt & Salameh, 2007) och kan vara en drivkraft bakom spädbarns intresse för ansikten (Gliga & Csibra, 2007). Genom att observera en vuxen persons beteenden lär sig spädbarn ömsesidig kommunikation och interaktion. Tack vare detta kommer spädbarnet sedan kunna ge och upprätthålla uppmärksamhet, samt utveckla turtagning (Crais, Watson & Baranek, 2009; Stillman & Battle, 1985). När barnet kommer ett steg vidare i den preverbala utvecklingen lär sig hen delad uppmärksamhet som involverar delat intresse för ett objekt eller en händelse (Tomasello, 1995). Dessa preverbala handlingar tillåter individer att funktionellt kommunicera utan ord. De flesta personer med GMPU är på samma nivå som ett spädbarn i sin preverbala fas, oberoende av deras ålder. Därför borde kommunikation med dem ske på ett liknande sätt som med ett spädbarn (Rowland and Schweigert, 2005; Rowland & Stremel-Campbell, 1987; Topbaş, 2008).

Vid användning av intensiv interaktion utnyttjas preverbala kommunikationstekniker för att interagera med och förbättra sociala förmågor hos personer med GMPU och/eller autism. Intensiva interaktionstekniker är till exempel imitering av ljudanden, ögonkontakt, ansiktsuttryck och delad uppmärksamhet. En person med GMPU och dess kommunikativa partner kan tillsammans utveckla dessa tekniker till ett förhållande med kvalitativa interaktioner (Nind & Hewett, 2001). Intensiv interaktion har bevisats vara effektiv i gynandet av social engagering hos personer med kommunikativa nedsättningar, speciellt hos personer med GMPU (Coia & Handley, 2008; Leaning & Watson 2006; Nind 1996; Nind & Kellett 2002; Watson & Fisher 1997). Det finns även studier som visar att användningen av intensiv interaktion är fördelaktigt i skapandet av positiva relationer mellan klient och vårdare samt kan minska oroligt beteende hos klienten (Zeedyk, Caldwell, & Davies, 2009; Watson & Knight, 1991).

Hanging out program (HOP) är en terapimodell som härstammar från intensiv interaktion och utvecklades av talterapeut Sheridan Forster (2008). De underliggande principerna i användningen av HOP är att dagligen i minst 10 minuter ha intensiv interaktion med en klient, i totalt 20 sessioner eller mera. Det är rekommenderat att videofilma sessionerna för att vid ett senare tillfälle kunna evaluera resultaten och göra en självbedömning för att förbättra insatsen till nästa session (Forster, 2008). Det är även viktigt att personen som utförde HOP reflekterar över vad som hände under sessionen och skriver upp det på tillhörande HOP-blankett. Detta används

främst för att dela erfarenheter och tips mellan vårdare då flera personer kan ge HOP-terapi åt en och samma klient.

Metod

En studie med multipel single-subject-design genomfördes vid Kårkulla Samkommun (KS). KS är en verksamhet vars primära funktion är att förse service och vård för svenskatalande personer med utvecklingsstörning i Finland. KS egen talterapeut föreslog lämpliga deltagare, varav tre valdes till studien. Deltagarna fick 20 individuella sessioner av HOP-terapi under en period på 4 veckor. Varje session videofilmades för att möjliggöra senare analys av materialet. Variablerna som valdes ut för att mäta deltagarnas sociala engagemang var ögonkontakt, kroppslig orientering och ljudande. Alla dessa variabler hade tre hierarkiska nivåer som representerade graden av socialt engagemang. Ögonkontakt kodades som antingen a) bort från partnern, b) mot partners kropp eller c) mot partners ansikte. Nivå a) indikerade en låg nivå av socialt engagemang, b) en högre nivå och c) den högsta nivån. Samma hierarkiska system kunde överföras till de två resterande variablerna. Orientering kodades också enligt nivåerna a) bort från partnern, b) mot partners kropp eller c) mot partners ansikte. Variabeln ljudande kodades enligt a) inga ljudanden, b) ljudanden och c) interaktion.

All kodning inleddes i början av varje session (0.0) och slutade då sessionen hade pågått i 10.00 minuter eller då forskaren avslutade sessionen tidigare på grund av deltagarens trötthet, smärtor eller koncentrationssvårigheter. Varje variabel kodades separat med en standard mikroanalytisk procedur. Analysen utfördes genom att varje förändring i deltagarens nivå av social engagering noterades. forskaren noterade varje gång det skedde en förändring i nivån av deltagarens sociala engagemang. Deltagarens ögonkontakt kunde till exempel vara enligt följande: vid 0.0 sekunder bort från partnern, vid 0.12 sekunder mot partners kropp, vid 0.17 sekunder mot partners ansikte och vid 0.20 sekunder bort från partnern. I slutet av sessionen summerades den totala tiden som tillbringats vid varje nivå av socialt engagemang.

Insamlat data konverterades sedan till ett socialt engageringsindex-poäng (SEI-poäng) för varje enskild session för att möjliggöra vidare analys av effekten av HOP-modellen (Zeedyk et al., 2009). SEI-poängen sträckte sig från en skala på 0 till 100, varav högre värden indikerade ett större socialt engagemang. I det första steget i

kalkylen tilldelades värdena 0, 0,5 och 1 till motsvarande variabelnivå. Värdena reflekterar den hierarkiska strukturen för nivåerna, där 0 representerar den lägsta nivån av social engagering, 0,5 den näst högsta nivån och 1 den högsta nivån. I nästa steg multiplicerades den insamlade data från varje session (appendix B) med det associerade värdet av 0, 0,5 eller 1. I det sista steget summerades resultaten för att skapa ett generellt SEI-värde för varje session. Detta gjordes separat för varje variabel. Resultaten analyserades sedan både kvalitativt och visuellt i grafer för varje enskild klient.

Resultat

Resultaten för klient A visade att det fanns stora fluktuationer i hans SEI-poäng från session till session. Terapisession 18 exkluderades från resultaten på grund av att klienten fick ett epileptiskt anfall. Klient A:s resultat tydde på att han gradvis ökade sin användning av variabeln ögonkontakt genom att oftare titta mot partners kropp och/eller ansikte under terapiperioden. Orientering var en variabel som klient A ökade med en liten mängd under terapiperiodens gång, emellertid var denna ökning för liten för att analyseras som ett trovärdigt resultat. Variabeln orientering konstaterades därför vara oförändrad hos klient A. Den tredje variabeln, ljudande, var den minst använda variabeln av klient A. En generell ökning från terapins början till terapins slut kunde emellertid konstateras.

Klient B:s resultat visade mindre fluktuationer i SEI-värden jämfört med klient A. Klient B ökade sin användning av variabeln ögonkontakt mot partners kropp och/eller ansikte under terapiperiodens gång. Användningen av den andra variabeln, orientering, ökade även under terapiperioden. Enligt visuella analyser verkade variablerna orientering och ögonkontakt korrelera med varandra under hela terapiperioden, med andra ord om ögonkontakt hade ett högt SEI-värde hade även orientering det och vice versa. Klient B:s användning av variabeln ljudande minskade under terapiperiodens gång.

Hos klient C kunde stora fluktuationer i SEI-värden ses i variablerna ögonkontakt och orientering, medan jämnare värden konstaterades för variabeln ljudande. Trots fluktuationer visade den slutliga analysen en ökning i klient C:s användning av variabeln ögonkontakt. Även klient C:s användning av variabeln orientering ökade under terapiperiodens gång. Den sista variabeln, ljudande, hade få

fluktueringar i SEI-värdena. Detta tyder på att ingen förändring hade skett i klientens användning av ljud under terapiperiodens gång.

Diskussion

Syftet med pro gradu-avhandlingen var att forska om användningen av kommunikativa handlingar hos vuxna med GMPU ändrar under en period med HOP-terapi. Enligt resultaten skedde en ökning i användningen av den kommunikativa handlingen ögonkontakt hos alla tre deltagare under terapiperiodens gång. Den här handling var även den mest använda handlingen av de tre som analyserades i studien. Orientering var den näst mest använda handlingen och det skedde en ökning i dess användning hos två av tre deltagare. Ljudande var den minst använda kommunikativa handlingen. Användningen av ljudande ökade hos en deltagare, minskade hos en annan och förändrades inte hos en tredje. Resultaten i denna studie stämmer överens med resultaten i liknande studier, till exempel Whittington och Alexanders (2001) studie om terapi med intensiv interaktion där en observerbar positiv förändring skedde i flera kommunikativa handlingar hos flera deltagare. Även i andra studier om terapi med intensiv interaktion förekom en ökning i användningen av både ögonkontakt och ljudande (Lovell m.fl., 1998; Watson & Knight, 1991).

Enligt Grove m.fl. (1999) är kommunikation en utmaning i arbetet med personer med GMPU. Denna komplexitet skapas oftast på grund av naturen av deras multipla nedsättningar och hälsoproblem (Bruce, Godbold & Naponelli-Gold, 2004; Crais & Roberts, 1996). Upp till 85 % av personer med GMPU påverkas av synnedsättning och 50 % har epilepsi (Lhatoo and Sander, 2001; Van Splunder, Stilma, Bernsen & Evenhuis, 2006) vilket kan ha en negativ inverkan på deras kommunikation. Både synnedsättning och epilepsi förekom hos flera av deltagarna i denna studie.

Trots att deltagarna i studien hade liknande diagnoser fanns stora individuella skillnader mellan dem. Hogg m.fl. (2001) och Petry & Maes (2006) påstående om att olika kommunikativa handlingar skiljer sig inte endast åt från person till person, utan även kan ha olika betydelser för olika situationer för samma person, kunde backas upp i denna studie. Dessa individuella skillnader gjorde det svårt att välja ut tre variabler som likvärdigt avspeglade alla tre deltagares kommunikativa interaktion.

En av de viktigaste faktorerna i användningen av HOP-terapi är att kunna anpassa kommunikationen till klientens och vara flexibel i hur vi kommunicerar.

Nind och Hewett (2001) stöder denna slutsats och noterar i sin studie att personer med GMPU och deras kommunikativa partner tillsammans med hjälp av användning av intensiv interaktion utvecklar tekniker för att uppnå ett kvalitativt förhållande och interaktion. Det är även viktigt att vid kommunikation ta i beaktande diagnoser hos klienten med GMPU. I denna studie inträffade ofta komplikationer som trötthet, utmattning, fysiska smärtor, ångest och rastlöshet p.g.a. andra sjukdomar hos klienten. Dessa komplikationer kunde eventuellt ha inverkat deras kommunikation under terapisessionerna.

Utifrån resultaten i denna studie kan det konstateras att HOP-terapimodellen visar lovande resultat i att öka användningen av kommunikativa handlingar hos personer med GMPU. Framtida forskning kring detta ämne kunde gå mera in på djupet av HOP-terapimodellen. Till exempel ifall användningen av modellen påverkar problematiskt beteende hos klienter såsom aggressiva tendenser och välmående överlag, samt om effekterna är bestående och hur modellen eventuellt påverkar vårdare i användning av den. Kommunikation är viktigt för alla, och de med GMPU är inget undantag. Mera forskning och således mera kunskap om detta ämne skulle förhoppningsvis vara ett steg närmare en förbättring av livskvalitet hos många personer med GMPU.

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Informerat samtycke om klientens deltagande i forskningsprojekt

Terapimodellen Hanging out Program (HOP) utvecklad av talterapeut och doktorand Sheridan Forster från Australien, baserar sig på intensiv interaktion med personer med grava och multipla intellektuella svårigheter i risk för isolering.

Interaktionsmetoderna grundar sig på naturlig växelverkan, där forskaren stöder deltagarens initiativ att kommunicera pre-verbalt. En ökad social gemenskap ökar livskvaliteten och välmående hos deltagaren. Intensiv interaktion har en stark vetenskaplig grund, och Sheridan Forster har format ett terapiprogram utgående från de pre-verbala kommunikationsteknikerna. Forster utvecklade HOP med motivationen att alla människor har rätt till daglig kvalitativ interaktion. Med hjälp av HOP kan personer med grav utvecklingsstörning erbjudas en kvalitativ interaktionsstund med personer i sin omgivning.

Syftet med den här studien är att utreda effekterna av HOP modellen på pre-verbala kommunikationsförmågor hos personer med grav utvecklingsstörning. Etiskt tillstånd för studien har beviljats av den etiska nämnden för psykologi och logopedi vid Åbo Akademi och av Kårkulla Samkommun.

HOP terapin utförs en gång per dag, 20 gånger under 1 månads tid, 10 minuter per session. Terapin utförs på ett för deltagaren bekant och tryggt utrymme. Varje tillfälle videospelas och skriftlig dokumentation på vad som skett under terapin görs efter varje session. Alla dokument och inspelningar förvaras konfidentiellt och bakom lås. Deltagarnas identitet kommer inte fram i avhandlingen. Efter terapiperiodens slut kommer en sammanfattning och analys av materialet att göras. För att ta reda på effekterna av HOP terapin kommer kommunikativa tecken under sessionerna att räknas.

Ifall positiva effekter konstateras kan personal vid Kårkulla Samkommun utbildas av experter för att använda modellen med klienter i risk för isolering.

Ert tillstånd för deltagarens deltagande är frivilligt och ni har rätt att avbryta deltagandet när som helst utan att ange orsak. Så fort studien är klar, delar jag gärna med mig av resultaten om ni så önskar. Under tiden, om ni har frågor går det bra att kontakta forskaren eller handledarna:

Forskare: Rebecka Lindholm
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Fakulteten för humaniora, psykologi och teologi
Ämneslinje: Logopedi
Åbo Akademi 2016

Handledare:
Pirkko Rautakoski, professor i logopedi,
pirkko.rautakoski@abo.fi, 022153631
Pia Lindevall, ledande terapeut vid Kårkulla Samkommun,
phaline@karkulla.fi, 0247 431 237

Jag _____ har läst igenom
informationen (Anhörigas namn)

om studien och godkänner att
år _____ (Deltagarens namn och
födelsedatum)

2016 deltar i forskningen som utreder effekterna av HOP modellen på pre-verbala kommunikationsförmågor hos personer med grav utvecklingsstörning.

Jag ger tillstånd åt _____ att
talterapi-sessionerna får video- och ljudinspelning. (Forskarens namn)

Jag ger tillstånd ger inte tillstånd

till att forskaren vid behov kan få bakgrundsinformation som är relevant för studien av personal som känner deltagaren väl.

Jag ger tillstånd ger inte tillstånd

till att forskaren får tillgång till deltagarens patientjournal på boendet för bakgrundsinformation.

Jag ger tillstånd ger inte tillstånd

till att materialet får användas av ledande talterapeut Pia Lindevall i utbildningssyfte för personal vid Kårkulla Samkommun.

Ort, datum, underskrift

Table 7

Percentage of social engagement for each variable during each therapy session

Session	Variable		Client A	Client B	Client C
S1	Eye gaze	Away	78.25	86.33	79.33
		Body	4.67	9.00	20.17
		Face	17.07	4.67	0.50
	Orientation	Away	0.00	84.67	52.50
		Body	100.00	11.83	44.17
		Face	0.00	3.50	3.33
	Vocals	No vocals	100.00	99.17	76.00
		Vocals	0.00	0.83	16.33
		Interaction	0.00	0.00	7.67
S2	Eye gaze	Away	63.17	58.50	87.00
		Body	28.50	34.67	11.67
		Face	8.33	6.83	1.33
	Orientation	Away	92.00	45.50	73.83
		Body	8.00	49.50	2.50
		Face	0.00	5.00	0.67
	Vocals	No vocals	92.17	100.00	83.83
		Vocals	5.67	0.00	7.17
		Interaction	2.17	0.00	9.00
S3	Eye gaze	Away	63.50	65.83	87.83
		Body	21.67	28.00	11.50
		Face	14.83	6.17	0.67
	Orientation	Away	58.83	63.67	83.50
		Body	25.17	32.50	12.67
		Face	16.00	3.83	3.83
	Vocals	No vocals	99.33	100.00	88.00
		Vocals	0.67	0.00	8.00
		Interaction	0.00	0.00	4.00
S4	Eye gaze	Away	55.83	65.67	47.50
		Body	34.72	29.00	48.17
		Face	9.44	5.33	4.33
	Orientation	Away	0.00	58.00	31.33
		Body	100.00	24.50	56.67
		Face	0.00	17.50	12.00
	Vocals	No vocals	97.78	100.00	83.33
		Vocals	0.56	0.00	9.33
		Interaction	1.67	0.00	7.33

Session	Variable		Client A	Client B	Client C
S5	Eye gaze	Away	50.50	62.07	35.46
		Body	17.50	30.24	19.62
		Face	32.00	7.69	44.92
	Orientation	Away	1.67	59.68	13.95
		Body	69.83	31.56	48.23
		Face	28.50	8.75	37.83
	Vocals	No vocals	99.83	57.29	90.07
		Vocals	0.17	42.71	3.07
		Interaction	0.00	0.00	6.86
S6	Eye gaze	Away	54.39	85.50	22.33
		Body	32.82	13.17	65.50
		Face	12.79	1.33	12.17
	Orientation	Away	35.88	71.50	7.17
		Body	55.15	28.50	68.50
		Face	8.97	0.00	24.33
	Vocals	No vocals	90.08	86.17	79.83
		Vocals	1.53	13.83	5.83
		Interaction	8.40	0.00	14.33
S7	Eye gaze	Away	17.72	26.67	0.00
		Body	69.62	66.33	87.74
		Face	12.66	7.00	12.26
	Orientation	Away	26.58	7.17	85.80
		Body	73.42	69.67	2.53
		Face	0.00	23.17	11.67
	Vocals	No vocals	92.17	96.17	85.80
		Vocals	5.67	3.83	2.53
		Interaction	2.17	0.00	11.67
S8	Eye gaze	Away	5.30	53.67	69.00
		Body	26.92	35.67	19.53
		Face	67.78	10.67	11.47
	Orientation	Away	0.20	67.33	56.45
		Body	90.18	22.67	13.98
		Face	9.63	10.00	29.57
	Vocals	No vocals	83.89	68.50	89.78
		Vocals	10.61	31.50	4.30
		Interaction	5.50	0.00	5.91

Session	Variable		Client A	Client B	Client C
S9	Eye gaze	Away	79.03	59.17	46.33
		Body	9.51	34.50	27.33
		Face	11.46	6.33	26.33
	Orientation	Away	49.90	63.00	61.67
		Body	40.19	30.33	22.17
		Face	9.90	6.67	16.17
	Vocals	No vocals	79.42	95.50	81.67
		Vocals	1.55	4.50	8.17
		Interaction	19.03	0.00	10.17
S10	Eye gaze	Away	71.49	23.67	47.74
		Body	2.98	68.67	34.18
		Face	25.53	7.67	18.08
	Orientation	Away	54.04	8.67	48.10
		Body	39.36	88.33	36.53
		Face	6.60	3.00	15.37
	Vocals	No vocals	87.45	87.83	78.48
		Vocals	2.98	12.17	10.13
		Interaction	9.57	0.00	11.39
S11	Eye gaze	Away	38.61	39.67	79.83
		Body	12.55	5.67	0.83
		Face	48.84	8.67	19.33
	Orientation	Away	30.69	23.00	71.17
		Body	32.63	60.33	13.83
		Face	36.68	16.67	15.00
	Vocals	No vocals	77.22	98.33	80.00
		Vocals	2.51	1.67	7.83
		Interaction	20.27	0.00	12.17
S12	Eye gaze	Away	31.00	31.17	90.33
		Body	4.50	61.00	4.00
		Face	64.50	7.83	5.67
	Orientation	Away	32.33	29.50	66.17
		Body	10.33	59.67	8.50
		Face	57.33	10.83	25.33
	Vocals	No vocals	83.67	100.00	87.67
		Vocals	0.67	0.00	5.83
		Interaction	15.67	0.00	6.50

Session	Variable		Client A	Client B	Client C
S13					
Eye gaze	Away		55.33	54.67	55.17
		Body	10.00	36.67	44.29
		Face	34.67	8.67	0.00
Orientation	Away		42.17	43.17	51.07
		Body	37.67	44.50	33.57
		Face	20.17	12.33	15.36
Vocals	No vocals		91.50	81.33	84.64
		Vocals	6.00	18.67	4.64
		Interaction	2.50	0.00	10.71
S14					
Eye gaze	Away		39.66	40.50	57.33
		Body	2.69	56.83	21.00
		Face	57.39	2.67	21.67
Orientation	Away		33.50	25.00	67.83
		Body	66.50	72.00	13.17
		Face	0.00	3.00	19.00
Vocals	No vocals		99.75	100.00	88.67
		Vocals	0.25	0.00	5.17
		Interaction	0.00	0.00	6.17
S15					
Eye gaze	Away		77.93	24.00	54.67
		Body	9.39	71.33	20.67
		Face	12.68	4.67	24.67
Orientation	Away		58.45	49.17	52.67
		Body	37.79	50.00	27.83
		Face	3.76	0.83	19.50
Vocals	No vocals		88.50	99.67	92.83
		Vocals	0.70	0.33	3.00
		Interaction	10.80	0.00	4.17
S16					
Eye gaze	Away		26.36	33.50	67.88
		Body	38.76	64.50	13.25
		Face	34.88	2.00	18.87
Orientation	Away		28.10	23.67	85.76
		Body	43.02	75.50	13.58
		Face	28.88	0.83	0.66
Vocals	No vocals		79.84	96.00	78.48
		Vocals	2.13	4.00	12.25
		Interaction	18.02	0.00	9.27

Session	Variable		Client A	Client B	Client C
S17					
Eye gaze	Away	Body	17.25	44.83	55.00
		Face	42.89	52.50	26.50
			39.86	2.67	18.50
Orientation	Away	Body	18.88	45.67	51.33
		Face	60.37	52.33	21.17
			20.75	2.00	27.50
Vocals	No vocals	Interaction	82.52	96.67	83.83
			9.32	3.33	7.50
			8.16	0.00	8.67
S19					
Eye gaze	Away	Body	47.84	71.83	70.43
		Face	28.02	23.00	28.49
			24.15	5.17	1.08
Orientation	Away	Body	50.80	80.50	24.19
		Face	35.54	15.50	75.81
			0.00	4.00	0.00
Vocals	No vocals	Interaction	99.09	100.00	81.72
			0.68	0.00	16.13
			0.23	0.00	2.15
S20					
Eye gaze	Away	Body	33.67	19.67	62.33
		Face	35.17	60.67	6.83
			31.17	19.67	30.83
Orientation	Away	Body	30.17	6.17	40.50
		Face	38.17	58.50	12.50
			31.67	35.33	47.00
Vocals	No vocals	Interaction	79.83	99.67	77.50
			14.33	0.33	7.00
			5.83	0.00	15.50



UPPFÖLJNINGSBLANKETT

Namn:

Ifyllarens namn:

Datum:

Tid:

Plats:

Vad hände?

Vad gick bra?

Vad gick inte bra?

Vad prövar jag på nästa gång?

Uppföljningsblanketten fylls i efter varje HYP-stund.





SAMMANFATTNINGSBANKETT

Namn:

Ifyllaren namn:

HYP-periodens början:

HYP-periodens avslutning:

Vad gick bra:

Hurdana meddelanden upptäckte vi att hon gav:

Vad gick inte bra:

Vad lärde vi oss:

Sammanfattningsblanketten fylls i efter varje HYP-period.



Pressmeddelande

Förbättrad preverbal kommunikation hos personer med grav psykisk utvecklingsstörning med hjälp av terapimodellen ”Hanging Out Program”

Pro gradu-avhandling i logopedi
Institutionen för humaniora, psykologi och teologi, Åbo Akademi

Tillämpning av terapimodellen ”Hanging Out Program” (HOP) kan förbättra preverbal kommunikation hos personer med grav psykisk utvecklingsstörning. Rebecka Lindholm har inom ramen för sin pro gradu-avhandling vid Åbo Akademi gjort ett projekt med tre personer med grav psykisk utvecklingsstörning vid Kårkulla Samkommun. Projektets mål var att undersöka om användningen av en individuell HOP-terapiperiod på tjugo terapisesioner leder till en förbättring i deltagarnas preverbala kommunikation.

Resultaten visar en förbättring i de flesta analyserade preverbala kommunikativa handlingarna. Resultaten kunde emellertid inte valideras med statistisk signifikans. Ett större antal deltagare skulle behövas för att bekräfta resultaten.

Svårigheter med kommunikation är ett återkommande problem i arbete med personer med grav psykisk utvecklingsstörning. Bristfällig kommunikation för dessa personer kan i vissa fall leda till bland annat social isolering. Användningen av HOP-terapimodellen är ett lovande redskap för att förbättra kommunikationen mellan personer med grav psykisk utvecklingsstörning och deras kommunikativa partner.

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