

Using haptics in health care settings

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Haptics are touch messages which are produced onto various parts of person's body which resemble words or signs. Haptics have their own grammar, and they form their own linguistic system, the social-haptic language. Haptics are formed in different ways; some are a natural description of an activity, while others are based on writing, signing or visual symbols.

When signs are changed into haptics, their grammatical structures change. The skin, the sense of touch and the kinaesthetic sense¹ (or movement sense) form a distinct channel for receiving messages as compared to the eye or the ear. Haptics are comprised of haptemes (compare phonemes, and the grammar of signing). Haptemes are for example pressure, duration, direction and speed (Lahtinen 2008).

The social-haptic language is composed of haptemes. During social-haptic communication two or more people produce/receive touch messages whereas in haptic communication information is received from a technical device by using touch (e.g. haptic feedback). The intentional development of haptics began in the 1990s. The first lecture on

the topic was presented in 1993 at the 7th Usher Study Group² meeting in Potsdam, Germany (Lahtinen & Palmer 1993). Haptics can be grouped into several sub groups. One type are those used in a particular situation or by a specific group of professionals. This article illustrates haptics used in hospitals by health care professionals. As developers of haptics Sanna and Russ tell of their own experiences.

Sanna Tuomaala reports about her experience with haptics in a recovery ward

I have Usher syndrome³. With the progression of this condition, my hearing and vision will both deteriorate. Presently, I use two cochlear implants (CI)⁴ with which I can hear fairly well in quiet surroundings. My vision is very narrow, only about 10 degrees. I become deprived of sight temporarily due to bright lighting conditions. Mobility in unfamiliar places is difficult without a guide. I communicate in speech, sign language and also in tactile signing, if necessary. In addition to these, I use social-haptic communication.

The hospital is one place where haptics are useful. Imagine a patient, who hears

and sees barely anything as the result of medication, a hearing and vision disability, or some other reason. In such a situation, touch is an excellent channel for receiving information; for example, what is happening in the room or what will be done next.

I participated (with others) in developing haptics and testing haptics in a hospital situation. The nurses informed me of the most important incidents and actions to be taken by using these touch messages onto different parts of my body. The following haptics were tested in authentic hospital setting when I had my first CI-surgery: doctor, don't worry, vaccination, blood pressure, it will hurt now, the time and "Is everything fine?" In that situation, the touch from another person gave also a sense of security and felt reassuring.

Russ Palmer reports about his experiences with haptics in several medical situations

I also have Usher syndrome. I use two cochlear implants, with which I get along in peaceful surroundings. I am also blind and when out of my home, I always need a guide. I communicate using speech,

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English finger spelling and social-haptic communication.

I have been developing haptics, teaching their use and analysing their grammar (i.e. haptemes) since the beginning of the 1990s. I use haptics all the time in various kinds of situations both with family members as well as with interpreters and personal assistants. For me, social-haptic communication is a natural, linguistic means of communication.

When I face a new situation, for example my cataract surgery, I tried to consider in advance what is a safe way of getting situational information. I knew that during the cataract surgery I could not use my cochlear implants. In that situation I am deafblind. Riitta and I used haptics that we had agreed beforehand (see photos) which worked well.

I have used those haptics also in other hospital and

health care situations.

Recently, for example, haptics were very useful while in the hospital in Brazil (Palmer, 2015) where only Portuguese was spoken by the hospital personnel. It was quicker for the nurses to learn to use haptics than to learn to pronounce English words. Haptics can be used together with cochlear implants or without them.

Pictures of the most common hospital haptics are shown. Deafblind persons may use this list of haptics and take them along in health care situations and introduce them to the health care personnel. Haptics are easy to learn because they are based on the activity and provide logical messages regarding the medical procedures to be done.

For further information about haptics, contact: riitta.lahtinen@icloud.com and www.russpalmer.com

References

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- Lahtinen, R. & Palmer, R. 1993. Communication with Usher People, Practical Ideas for the Family & Professional. Proceedings, Seventh European Usher Syndrome Study Group.
- Russ Palmer hospital Brazil link (2015): <http://youtube.com/xfEbNaszE7k>

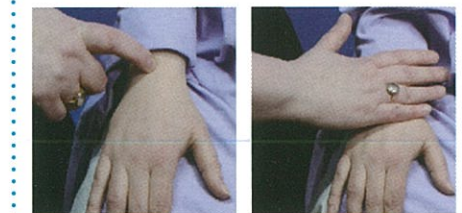
Haptics in a hospital

Practical haptics for a person who is deafblind or hard of hearing. Haptics will help with communication in a hospital and for deafblind individuals also with orientation in a situation when other devices are not in use.



"Hurting"

Blood pressure



Time

Wait, no movement



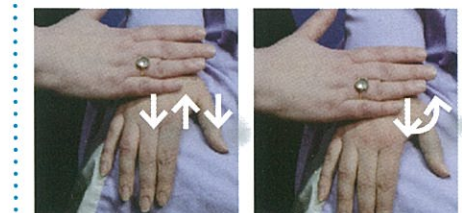
Nurse

Doctor



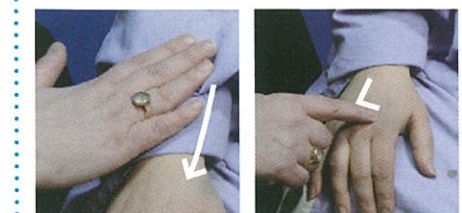
Injection

Finished



Yes

No



Stay calm

Is everything ok?

¹ medical-dictionary.thefreedictionary.com/kinesthetic+sense

² Usher study group is now called the DbI Usher Network (<http://usher.deafblindinternational.org>)

³ www.nidcd.nih.gov

⁴ www.nidcd.nih.gov