Sex

Love

and Dignity
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ABSTRACT

Sex and disability is a subject which is poorly discussed in today’s society. Sex as pleasure for disabled is widely ignored and recommended to be avoided since society believes that people with disabilities are vulnerable to sexual abuse. In contrast, studies show that the vulnerability is a result of disabled dis-empowerment. Accordingly, in today’s market, there are few sex products intended to people with disabilities.

Can disable people who don’t have feeling below the waist trigger the sexual pleasure using other senses?

With millions of specific tactile receptors located all over the body, people are sensitive to pressure, temperature, limb position, pain, and vibration. Depending on the number of receptors the sensitivity increases. Therefore there are more erogenous zones than genitals.

As a result, it was designed Solo, an inclusive sexual toy for exploring and stimulating erogenous body areas. Solo uses warm and cold impulses, smooth air pressure and vibration. It is coordinated by an app, where the user can change intensities and connect with a partner.

Solo was inspired by people with disabilities, by the need of receiving and giving love and the difficulty to do it in the traditional way. It was created with the aim to provide a sexual experience where the disability is not a problem but a resource.
INTRODUCTION

All people have an equal right to their sexuality and to freely express it without discrimination, including the Human Rights (UN 1984) Sexual and reproductive rights (IPPF 2008) and the Discrimination Act (2008: §67).[1]

In the UN Standard Rules for Equalization of opportunities for people with Disabilities (rule 9), highlights that people with impairments should have the same opportunities to experience sexuality and have sexual relationships with other people. Following this rule, legislation should support appropriate counseling.[2]

Despite all the rules, it is still not the reality which we have today.

I chose to research on this subject because I firmly believe that everyone deserves to feel accepted for who they are, regardless of their disability, sexual preferences or beliefs. Hard to admit, but in human’s life, sex plays an important role, it shows how attractive, we feel that we are, it raises our self-esteem and the emotional well-being.

Despite all benefits, sex is still identified as the taboo subject in our society, and much more for people with impairments, as they are recognized as asexual which equals non-attractive. Ignorance and stereotypes created a stigma in society, which disabled people face it every day. The chances to express their sexuality are reduced and judged; to explore it, is beyond the reach. In consequence, the disability is the only identity of people with disabilities, and the cause that they don’t fit the “norm.”

I want to make the sexual identity of disable people visible and important as everyone else’s. Also, to give them the opportunity to explore more their sexuality.
Are disable people sexual? Can they have sex? How do they fulfill their sexual needs? What can facilitate their sexual life? Are the sex toys an answer? These are the questions that started the research.

In “Life of dignity, Sex, Love and Disability” I will write about what is sexuality, pleasure, erogenous zones and how they influence people’s life. I will focus on physical disable people, and their boundaries when expressing and exploring their sexuality.

Moreover, I will bring and analyze examples on how other countries treats Disability and Sexuality in the same context.

The research has the aim to find a solution that will help physical disable people to express and explore better their sexuality. Also, give the opportunity to mobile disable people to find another way of receiving and giving sexual pleasure than the traditional one.
Sexuality is the cultural way of living out our bodily pleasures and desires.

Human sexuality is the ability to feel erotic experiences and responses. People can feel and express sexuality in several ways, including sexual and reproductive anatomy and body image. Also, the attraction to desires, fantasies, sexual preferences, attitudes, ideals about life, love, sexual relationships, roles and sexual behavior.

Sexuality is identified with gender identity, sexual orientation, and actual practices, along with the acceptance, which may be more important.\(^2\)

Maslow’s hierarchy places sex in the physiological needs category along with food and breathing.\(^1\) Also, he places sex as intimate relationships in the belongingness and love needs, which represents an upper level of sex as a physical need. (fig.1)

Sexuality is seen as a human right, and as Tepper states “full inclusion means access to pleasure”\(^2\)
PLEASURE

Pleasure is a state of sensory consciousness experienced by our minds and defined by our beliefs, knowledge, attitudes, desires and life adventures. Pleasure is essential for mental health and general quality of life.

There are three big pleasures of a human life: food, social and sex. Food is known as essential pleasure for survival which people are born with, while the social pleasure develops more during the childhood.\(^{(1)}\)

The pleasure of sex is significantly different in that sexual interest is not present at birth but frequently only develops during puberty. There are natural variations in the interest in different stimuli as the individual tries to balance exploration and exploitation, to find a balance between new and existing sources of pleasure.\(^{(1)}\)

Fig. 2 Life-time evolution of the incentive values of different pleasures

\(^{(1)}\) Source: http://www.sciencedirect.com/science/article/pii/S0301008212000718
The experience of sexual pleasure starts when the skin receptors in one or more erogenous zones are stimulated, and ends with an evaluation within the brain on how the sensations were experienced usually being pleasurable and sexual.[1]

People may be stimulated beyond the sex organs. Several of nature’s aphrodisiacs are available, sights, sounds, tastes, and smells, including touch, all can feed imagination, desires and fantasies.[2]

This mental, beautiful, and often intensely intimate pleasure is the key to stimulating the body’s sexual responses for all, with or without disabilities. The desires that get people started may vary, but the natural connection between mind and body is the generator of sexual pleasure.[2] Psychologically, pleasure drives the human desire for sex.
EROGENOUS ZONE

An erogenous zone (from Greek ἐρως, ἐρῶς “love” and English -genous “producing” from Greek -γενής, -genēs “born”) is an area of the human body that has profound sensitivity, the stimulation of which may fuel a sexual response, such as relaxation, sexual fantasies, sexual arousal and orgasm.[1]

The brain is in charge for emotions, perceptions and senses. Erogenous zones can be found all over the human body, but the sensitivity is different, and relays on the concentrations of nerve endings that can offer pleasurable sensations when are stimulated.[2]

According to Emma H. Joensson et al., touch was ranked as more erotic when is perceived pleasant and weak. In the hairy skin, where are C tactile, the awareness of pleasantness is correlated with the firing rate of C-tactile afferents, and perception of intensity is correlated with the firing rate of Aβ afferents. Respectively, eroticism may be perceived most readily or touch stimuli that induce high activity in C-tactile fibers and low activity in Aβ fibers.[3] In other words, erotic is perceived when the intensity of pleasure is powerful and slow.

Sex is mostly between your ears, not your legs.

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![Afferent and efferent nerve transmission](https://www.boundless.com/physiology/textbooks/boundless-anatomy-and-physiology-textbook/peripheral-nervous-system-13/nerves-130/classification-of-nerves-696-9338/)
From all senses, touch is the first sense to develop. It is vital to life and necessary for normal development. Interpersonal contact, also sexual contact, are considered the most controversial of all senses, since is perceived by some as uncomfortable or threatening, and by others as the essence of sublime pleasure.

With millions of specific tactile receptors located all over the body, the skin, where the touch receptors are activated, is the largest of all the sense organs.

Below the skin is located free nerve endings and touch receptors. They are sensitive to temperature, limb position, pain, vibration, indentations of the skin and pressure.

**THERMO-RECEPTORS**

Thermo-receptors are free nerve endings that occupy areas approximately 1 mm in diameter.

Cold thermo-receptors respond in the variety of 5°C to 40°C. At about 34°C which represents the standard skin temperature and fire most frequently at 25°C. Warm thermo-receptors are stimulated in the temperature range 29°C to 45°C and are most active at 45°C (Gardner, Martin, & Jessell, 2000).
DISABLE SEXUALITY

When it comes to sexuality, every disabled person knows what exactly they are not allowed to do. The problem is that most of them do not know what they are admitted to do. [1]

Sex and disability tend to be a restricted area in society. The sexual desires and lives of women and men with disabilities is a subject that makes many non-disabled people feel deeply uncomfortable. They do not like to think about disabled people as having sex - but willing to express an opinion about their sexual rights. [2]

Disabled people are often isolated from the rest of society to protect them from their supposed vulnerability to sexual abuse, which studies show that is often believed to be the result of their relative social dis-empowerment. [3]

In November 1966 was the first time when sexuality and disability question was raised in Sweden. Today, we have information that helps to understand sexuality and disability, but sex as a source of enjoyment for impaired people is largely ignored. Today, sex for disable people is acknowledged as a possible abuse, vulnerability and it needs to be prevented.
proscribed by society as improper or unacceptable
"We are repulsive physically for anyone able-bodied to possible consider us sexually attractive."[1]

Thomas et al. (1989) made a study comparing friendships, relationship and social skills of disabled and non-disabled youth. He found out that 93% of 150 disabled youths had at least one complication in social situations. 56% had such huge difficulties that they avoid social situations. The study suggests that being a disabled person does not mean that there are fewer opportunities to build relationships and a sexual identity, it is the way in which some impaired people are brought up in the society which inhibits them from interacting fully with people.[2]

Society has caused the pervasive belief that disabled people are inherently asexual and not attractive.[3][4] For example, sexuality was handled by family and professionals with the mean to save some disabled people the embarrassment of being rejected. Research show that patients with spinal cord injuries were constantly told to stop thinking about relationships because they would never have one.[5]
INDIVIDUAL TABOO

“There is a mobile problem, or your body limits you, but sometimes the biggest limit is your mind.”[1]

Disability is the first seen identity in a person with special needs. The individual taboo is created by people’s prejudices, their insecurities which are nurtured by other people’s prejudices, by the cultural value, and by the social settings. For people with disabilities becomes difficult to explore and express their sexuality.[2]

Zilbergeld explains how society provides an idealistic definition of sex, sexuality and limited definitions of masculinity which become impossible for the majority of the population to follow, much more for disabled men.[1] In our society masculinity is equal with being strong, powerful, dominant, and sexually assertive.[3][4][5][6]

Femininity has been built within a narrow frame, where the main focus is the external beauty, the image of a “normal” female body is represented in a very different way to the “natural” female body, women are put under extreme pressure to appear perfect.[2]

This limited settings of acceptable notions of men and female have caused a situation where many disabled people find it difficult to fit the culturally endorsed standards of sexual appeal.
SCI AND SEXUALITY

Spinal cord injury is a difficult life event which can alter everyone’s life. It is mostly identified with loss of motor and sensory function and sexual impairment.[4]

According to Marika J. Hess and Sigmund Hough, people with spinal cord injury can feel the orgasm by stimulation the erogenous body parts, despite the level of the injury. Regardless that the orgasm is not visible, the detailed description of orgasm is identical with non-injured.[5]

Vibratory stimulation has been reported to be an effective method of enhancing sexual arousal in both men and women, with amplitudes of 2.5 mm and frequencies of 100 Hz for men.

Studies show that after spinal cord injury, different parts of the body, especially at the level of injury can become sexually pleasurable. For instance, the stimulation of the nipples, earlobes, or inner thighs may become erogenous and even provoke genital awareness in when the genital sensation is absent.[6]

Whipple notes that there is a nerve bundle named the sensory vagus, which bypasses the spinal cord. The nerve is carrying nerve impulses straight from the genitals to the brain. So even if the spinal cord is damaged, “pleasure“ messages can be transported through the sensory vagus from the genitals to the brain, triggering the experience of orgasm, which is felt in the part where you have senses.[7]
Bauman (1999) points out that people are in an endless cycle, pursuing an unreachable goal of sexual pleasure. So, people are trying out unlimited methods to reach this ideal. The possibilities to make money from people’s sexuality and desires are countless; starting from pornography and sex toys to drinks in bars and fashionable clothing. It is hard for disabled people to engage in this commercialization of sexuality since many of the areas where sexuality is consumed are inaccessible for people with disabilities.[1]

As Tiefer says, that having sex stands for being an adult in our society, and it serves as proof of “normalcy, worthiness and competence.”[2] Sexuality can be seen as having a central role in the way that we portray our bodies, our individuality and “our status in the world.”[3]

The valuable position that sexuality has come to have in the economy, in people’s relationships with others, and their identities, makes it clear why disability activists are fighting for the right of full sexual expression.[3]
CONCLUSION

Sexuality is a human right, and considered a basic need, as studies show, regardless of physical disability, people still can feel the pleasure of sexual activities and describe it in the same way.

Today, there is a traditional way of having sex, which is the intercourse. Based on several studies, sexual pleasure is not just the intercourse; it is not between legs, it is between the ears, which is the mind. The sexual pleasure comes from the brain and can be triggered by multiple places of the human body. Using the five senses: sight, hearing, taste, smell and touch the sexual pleasure can be triggered and intensified.

Brown believes that impaired people are in the position to undermine the conventional definition of sex and “challenge the notion that you have to be rich, beautiful and successful to have sex,” and maybe they can teach the full-able population to defy this myth.\(^{14}\)
HOW OTHERS APPROACH SEXUALITY AND DISABILITY

AUSTRALIA

The “Department of Health and Human Services” in Hobart, Australia, 2001, legalized for “health workers” to aid disabled people to access sex workers (Fig.5).

People with disabilities, sex workers and representatives from service providers and advocacy groups have created “Touching Base Committee,” whose aim is to increase the accessibility and legitimacy of disabled people to sex workers.[1]

Professional Disability Awareness Free Trainings for sex workers.[1]

Service Provider Awareness Training for disability service providers and carers, where they support people with disability to access the sex industry.[1]

Even one brothel in Melbourne has build an accessible room with all the amenities and equipment needed for disabled customers.[2]
SWITZERLAND

An organization called ‘Pro Infirmis’ has in hold training for ten ‘touchers’ who are aimed to aid disabled population in Zurich with “sexual and emotional relief.” Which later will be extended to include oral and penetrative sex, by employing fully trained prostitutes.  

The organization Pro Infirmis designed cloth mannequins based on the bodies of disabled people to celebrate the International Day Of Persons with Disabilities (Fig.6).  

“Altogether there are about 20 people in Switzerland who are trained to be surrogates. There are a lot more women than men because there’s more demand,” - course leader Erich Hassler  

Switzerland’s Sexuality and Handicap charity, SEHP, give support to people with disabilities to be sexually active.

GERMANY

Trainings Sexualbegleitung ISBB® - training which is aimed at women and men from the age of eighteen who want to support people with disabilities, to be able to live sexuality self-confidently and confidently.  

airAmour - sex education which focuses on the self-determination of those affected and therefore understands the basic need for relationship and sexuality as an indispensable part of the personal freedom of every human being.
DENMARK

Handisex - work with all aspects of sexuality for people with disabilities, their families, support staff and professionals.

- For people with disabilities: investigation of sexual needs, sex education, sex training, aid to masturbation and sexual intercourse, sensual massage.
- For professionals & caregivers: sexuality and disability, to work with sexuality, law right and duty, identification of citizens' needs, boundaries & abuse, practical sex help, sexual politics.

Sex Maniacs Ball - creates parties which embrace fetishes, for fully able and disable people. The aim is to help with the integration of disabled people in a sexual environment, bringing joy rather than misery.

The help in using sex toys, brochures with policies, group discussions about sex, jealousy, contraception, role playing in group homes, makes it clear to residents that sexuality is possible and acceptable.

Danish Association of Youth With Disabilities organized the LigeLyst campaign. Part of it was an exhibition where 13 young people with different backgrounds have chosen to get naked and share their love and sexuality (Fig. 7). The aim was to show that youth with disabilities are sexual and have the right to practice it as anyone else. Also, to challenge the prejudices surrounding the theme: sexuality and disabilities.
UK

In England, prostitution is legal as long as it involves a self-employed person, working alone, from a property that they own and doesn’t advertise it.[1]

Outsiders - is a social, peer support and dating club, run by and for socially and physically disabled people. The members have a broad range of impairments, including visual and hearing impairment.[2]

The RCN (2001) have created a booklet for nursing staff to explain how they should handle the issues of sexual health. They believe that neglect the fact that people are sexual beings can have serious psychological consequences.[3]

Spokz- a company that sells wheelchairs, also sell sex products for disable people.[4]

TAIWAN

Taiwanese NGO (HandjobTW) sends volunteers to give handjobs to the severely disabled.[5]

JAPAN

White hands- “Ejaculation help” is a service for people with disabilities who can not physically perform the acts ejaculation.[6]
Today several solutions aim to help disable people to have a better sexual life, to feel proud of their body and feel attractive.

One of the most common solutions used by other countries is sex workers. They receive training and are competent to offer sexual services to disable people. It is a good way to provide to disable people sexual experience without the feeling of being rejected, but at the same time, it can create a new stereotype which is that disable people can have sex only if they buy it. Having sex with a sex worker disable people learn, how to fit in the sex experience of full-able people, but do they explore, things that a full able doesn’t?

There are organizations which are trying to show the beautifulness of an impaired body to the society. Solutions as making mannequins with the shape of a handicapped, expose the body sexuality of a person with disabilities in nude photographs, are trying to reveal that beautiful and sexuality is not about perfection. I think this type of simple solutions, that expose the beautiful of a human body should be implemented in every country as proof that people have different shapes and that is what makes them beautiful.
PRODUCT ANALYSIS

Nowadays, many products trigger the sexual satisfaction, sex toys used by women, men and couples, in different shapes, colors, materials and intensity of vibrations. The sex toy aims to bring satisfaction by stimulating the genitals, which is know as the most erogenous zone, but not the only one.

Many disable people find it difficult to use sex toys, because of the product shape, the limit of mobility from their body or the lack of senses below the waist. There are few sex toys which are inclusive (Fig.9) for disabled people or adapted to them(Fig.10).

On the market, there are also products which are designed exclusively for disabled people, which aim to help disabled people to have a better sex position [Fig.11, Fig.12].
HYPOTHESIS

Disable people who don’t have feeling below the waist can trigger the sexual pleasure using other senses.

The social behavior can affect how sexual disable people feel.

TARGET GROUP

People who have no feeling below waist and bad grip, with or without a partner. As a reference group were chosen individuals with spinal cord injury since they fit target group’s specifics.
Chapter 2. Methodology

METHODOLOGY

INTERVIEWS

Interviews were done with disable people and non-disable which have a direct connection with someone with a disability. Eleven people were interviewed: four physically disabled were carefully chosen based on gender, disability, sexual identity and relationship status. The reason for questioning four entirely different mobile impaired people was to find a pattern which connects or disconnects all of them; four personal assistants, three women and one man, who during their career worked in different places; one sexlog and two men who work as a seller at a sex shop. All interviewed people are living in Sweden.

BRAINSTORM

Two brainstorms were set up with four designers, on two questions: How can exploring body sensations help love your body? How can sex products make society know that disable people are sexual?

Based on the questions, eight needs were identified: the need to have options to explore the body, to be responsive to explore the body, easy to handle information, easy to explore the body, relaxing, to be satisfactory, easy to handle and to be fun. Several ideas were created to fulfill these needs.
USER TEST 1

The first user study was organized with two test people: a man that has spinal cord injury and therefore a bad grip and a man that has rheumatism. There were tested over ten products, with different grips and materials. The goal was to observe how they handle the products, what are their best grip and what are the details that help them to have a good grip.

USER TEST 2

The second user was a co-creation with the two users, one man with spinal cord injury and a woman with rheumatism. The test people were chosen to have a different gender, and different needs. There were prepared different shapes from foam and white clay, which during the user test were combined in order to find the best grip for both users.
INTERVIEWS

After the interviews with disable people, I did found an emotional pattern which connects all of them, which is the need of being accepted, by themselves and society, and the desire to explore their sexuality, which they find it hard sometimes, since, their body limits them, but more their mind.

I also observed that two of four weren’t proud of their body, they expressed feelings of shyness and “trying to be normal.”

With the personal assistants, I found out that they don’t have a policy or rules regarding sexual situations and the person they assist. A personal assistant in Sweden doesn’t have any training in how to handle sexually intimate situations with the person they help and is not because it is not happening. According to them, it is common that a disabled person gets aroused during their care, and the usual behavior is to ignore it and change the activity. Moreover, they are not instructed to have discussions about sexuality and they don’t do it. They think it is important that disable people have a sexual life, but three of four wouldn’t want to be involved in it, such as position condoms, or sex toys.
“Which are the common problems that physical disable people come to you?

- The resources and challenges can be different, and in my sexological experience a disability is very seldom “THE ONE” thing that causes trouble. Physical disabilities can be both a resource and a challenge.

-Lennie Lindberg, Specialist in Clinical Sexology (NACS)

On the interview with workers from the sex shop (Fig.13), I found that there are disable people and family who goes there to buy sex products, which suggests that disable people do have a desire to explore their body sexually. It is more common that family buys sex products for male than for female, which points out that it is still easier to accept that a man needs sex than a woman.

Regarding the behavior, that majority of costumers have it, when they enter in the sex shop, storekeepers think that there is an embarrassment, because of the unwritten rules that sex is a private matter and people shouldn’t speak about it. Although sex is considered an essential need, the sales don’t go so well as for a general shop.
BRAINSTORM

The brainstorms resulted in 89 different ideas, where each of them can be developed or combined for a bigger purpose.

As a result, a mind map was created and ideas were combined in order to fulfill a need but at the same time to break a part of a taboo, some of them being:

- app which learns user’s sex life pattern and reminds when to have sex, water sex toy, sex marathon, training to teach users how to explore their body, a campaign where disable people teach able people how to explore differently their body, sex games where you play by exploring the body, fast service - extra support for information, include disabled people in media, sex keeper - keeps track of the user’s sex life, sex toy using different senses, etc.

After an evaluation, based on possible outcomes, resources, and meaningfulness three ideas were combined and developed for further evaluation:

#sexualdiversity
#sexspoter
#sexbox
#sexualdiversity

How do you change a social behavior?
You inject in the social subconscious the preferred action.

Condoms with character, a series of condoms which come in one pack, with a disabled, transgender, gay, hetero, women, men, old people, black, white, etc. character, also accessible for blinds.

Condoms are the most common sex product, although the condoms are used by men, they are still used to promote safe sex for everyone.

The idea behind the product is that by often looking to a product that tells you that disabled, transgender, gay, hetero, women, men, old, black, white people are having sex, in time the subconscious will recognize those groups of people as sexual ones.

Also, as identifying yourself as a part of one of the groups, the feeling of being included and sexual will be built. Also, a shadow of doubt will be raised on the though that many have “it is impossible for me to have sex.”
#sexspotter

A product which comes with an app. The product will help to explore and find the erogenous zones of the body, by using the five senses which will intensify the feeling of sexual pleasure. The idea is to create a product which points out the sexual pleasure without triggering the genitals. So, people that don’t have feelings below waist have an option to explore their body sensations.

The app can be connected with the product and save all user’s erogenous zones and can be used as communication between partners.
Chapter 2. Results of brainstorms

#sexbox

Online sex shop, where people by selecting their preferences or nonpreferences will receive a surprise box which fits their preferences and has all it needs, starting with oils, lights, music, and finishing with sex toys, creates a distinct sexual intimacy.

Also, to include, possibilities to use the product, for disabled people in the instruction/package of sex toys.

The idea is to develop a system were disable and non-disable people could overcome the shame of exploring their sexuality by adding a surprise detail.
IDEAS EVALUATION

Based on the research, social awareness is a major step in expressing and exploring sexuality. Also, there are solutions from other countries, which are trying to create a social awareness regarding the sexuality and attractiveness of disable people. Those solutions could be easily implemented in Sweden also.

Researching the market, and the existing products for sexual pleasure, I found out that all the goods intended for sexual pleasure triggers the genitals, and for a person that doesn’t have feeling bellow the waist, those products become useless. On the other hand, there are products designed for body massage, which prompts people body relaxation, but not the sexual pleasure. So, there is a gap between sex toys and massage products, which individuals with no feeling below waist could use to provoke the sexual pleasure from other body parts than genitals.

Consequently, I chose to develop a product that triggers sexual pleasure on other body parts than genitals. The product will be designed for people that don’t have senses below the waist, have a weak grip and a desire to explore their body sexually. In this way, I can give the opportunity to physical disable people with no feeling below the waist and reduced grip and mobility to discover another way to feel the sexual pleasure, than the traditional one. They will have the possibility to question it and also to change the view of sex in the society. They can teach another way to have sex.
The first user study concluded that in comparison with the shape of the product material which offers an excellent friction is more important.

Unregulated shapes are easier to grip and hold. Also, products that give the possibility to go around finger(s) are felt as more secure and impossible to drop.

There was also tested a product that was attached to the wrist, so there was no need to hold it. A comment on this types of products was that they would like to handle the product with the hand because it gives the feeling of being in control.

“If the product is what I need, I will learn how to handle it!”

-Test person
USER TEST 2

In the second user test was created the final shape. The users created the grip that is easy to grasp, hold and gives the feeling that is safe in hand.

Between the best looking and the best grip, they chose the best looking. Therefore, in the end, was decided to be created a combination between the product that had the best grip and the best looking.

The fact that they preferred the better-looking product suggests that they don’t want to feel special, with excluding products, which fits just disabled people. They wanted this product to look nice, so everyone feel attracted to use it, and be possible for them to use also.
SHAPE

The final shape was chosen in concordance with the result from user tests and the feelings which should deliver to the user.

An organic shape with smooth lines which expresses the warm of a caress. A shape that doesn’t have a right or a wrong way to hold, it leaves space for imagination and opens new fun ways to use it.

Based on the research, disable people don’t explore their body as looking at it or touch it. In consequence, I designed an opening in shape to give the user the opportunity to connect with his body at the same time as playing with the product. Also, one of the test people, used the opening as a grip, saying that he feels more confident that he wouldn’t drop the product.
The final product will use three primary functions, which will be coordinated by an app.

The first function is warm and cold impulses. Based on several studies the thermo-receptors are very sensitive to changes in skin temperature. The contrast of hot and cold pulses will trigger pleasure on body skin. The range of temperature will be from 20 t° to 45 t°.

The second function is vibration. It is used for a long time in sex toys and is known as a stimulator for erogenous zones. The product will have small vibration with the possibility to increase or decrease the intensity.

The third function is air pressure. The little air pressure will mimic the breath of a person and trigger the “goosebumps” on the skin.
The product is built from existing technical parts. They were combined and placed inside in a way which gives the best experience to the user.

The technical part was created together with Ulf Bergqvist – CTO at Nordforce Technology AB.

Peltier is an instrument which can be used as a temperature controller that either heats or cools. The product uses four peltiers, two for cold impulses and two for warm impulses. They are placed in the bottom of the product and are connected to a stainless steel part, which conducts the warm or cold on the skin.

It uses two vibration motors. They are placed at the bottom, to assure a closer contact with the stimulated part, but at the same time to minimize the vibration that passes to the hand.
The cooling fan has the role of creating the "human breath" effect. It is placed in the top part of the product and secured with a thin wall, to give a better and precise effect.

The central processing unit has the function to execute all of the instructions from the software.

The printed circuit board serves two purposes. First, as a carrier for the CPU and other electronics. Second, as a connection point for all internal cables, in which the CPU resides.

The product uses 2 AAA batteries, which are charged using a wireless charger module. It was estimated that the toy could work 3 hours with all the functions ON at the same time. It was chosen to use a wireless charger to exclude the limitation of having a cable with the product.

The toy connects with the app through a Wifi, Bluetooth antenna.
Solo is inspired by disabled people, by the need to make love and the incapability to do it in the traditional way.

Solo is an inclusive product which was created to explore the body pleasures, to discover the erogenous zones and stimulate them.

It is designed to be used by women, men and couples.

With predefined programs, Solo combines three functions: warm and cold impulses, air pressure and vibration to create the perfect journey for the body.
HOW SOLO WORKS?

There are two modes that the user can use Solo: the solo and duo mode.

The solo mode is designed to be used by one person, meaning that the same person uses the toy and the app at the same time.

The duo mode was created to be used together with a partner, meaning that different people use the app and the toy at the same time.

The two modes were developed to give options to the user but also to give space to become creative and playful alone or with a partner.
Solo mode has several predefined programs which the user can explore, create his programs, share and update new ones.

The solo mode was designed to help people, to intimate rediscover their body. The experience of new ways of body pleasure has the aim to compel the user to love his/her body, to be proud and curious about it.

By dragging the user can change the intensity of every function. He/She can choose the maximums and the minimums of the program, adjust it to preference. The program can also be personalized by combining two or more functions together, which are chosen by the user.
The duo mode is created to be used together with a partner. The partners connect to each other through the solo app, which gives the possibility for one partner to build and change the program for the partner’s toy, meaning that the toy is coordinated by one person and it is used by another one.

The duo mode was created to bring people together even if they are not close. Also, to involve the partner in the play of exploring the body, which can surprise, please and connect in an intimate way.
CONCLUSION

Solo is designed to give the warm comfort of body temperature, the smooth breath of a lover with a cold contrast to amplify the pleasure along with soft vibrations to stimulate the satisfaction.

It has the aim to connect the user with the body, raising the self esteem by making the user explore, enjoy and in the end love his/her body.

Also, solo brings together couples that can’t be in the same room, by expressing the desires in other’s experience with solo.

Ultimately, solo was created to open a door and raise a question.

Should we try to fit disable people in non-disable people's experience or should we find common ground where everyone is full able?

Essentially, solo has to do with human worth and dignity.
FUTURE DEVELOPMENT

No product is perfect, and it needs constant updates to keep the users curious in using it. Solo is not an exception. There are several ideas which could be implemented as further development. They are not included in the present product for the reason that there is no existing technology yet or it needs a more advanced research.

One idea is to make it possible for the user to create his body map in the app. By using the solo product as a pencil for building the map, everyone can draw their non-regular shape of their body, and not use a “standard” form. Having a body map in the app gives the possibility for the solo toy to recognize the exact place where is positioned on the body which opens the opportunity to reflect all sensitive areas on the body. It can be used as information for user concerning his/her body about what are the spots that are erogenous and what are the places that weren’t explored. Moreover, can be used as communication between partners if they would share their body map.
Based on the body map can also be implemented a sensor in the solo toy which can evaluate the intensity of pleasure by measuring the pulse or the blood flow, which studies show that are raising during satisfaction.

Besides, can be developed a feedback system both in the toy and app. The feedback from the toy would have the function to inform the user when is close to an erogenous zone, giving the possibility to be more playful. The feedback from the app will be used by the partner, to increase the satisfaction by knowing the level of the pleasure of the user.

With a deeper research on the senses of the human body, it can be developed games, to play together with the partner or alone, having as purpose the body exploration and new ways of feeling sexual pleasure.
ACKNOWLEDGMENTS

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Thank you!
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CHAPTER 1

SEXUALITY


Fig 1 http://www.sciencedirect.com.proxybib.miun.se/science/article/pii/S0301008212000718


PLEASURE


SEXUAL PLEASURE


TOUCH


DISABLED SEXUALITY

[1] Loneliness and its opposite, Don Kulick and Jens Rydstrom

[2] Loneliness and its opposite, Don Kulick and Jens Rydstrom pag 2


EROGENOUS ZONE


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SOCIAL TABOO

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INDIVIDUAL TABOO

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SPINAL CORD INJURY


SEXUAL CONSUMERISM


CONCLUSION


HOW OTHERS APPROACHED SEXUALITY AND DISABILITY


[16] Loneliness and its opposite , Don Kulick and Jens Rydstrom


[18] http://ligelyst.dk/udstillingen/ [accessed 05/03/2017]
For those who make love possible!