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Patients' perspective of digital healthcare

-Social implications during a digital healthcare meeting

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Abstract

The purpose of this study was to gain a deeper understanding of the patient's perspective regarding social interactions in video healthcare meetings. Social presence theory was used in the context of how video calls can result in vital aspects of social interactions disappearing and how that can affect the outcome of a doctor consultation in contrast to physical meetings. A qualitative method with semi-structured interviews was applied to this study. This study included 7 participants with similar age range from 26-36 years old including both genders. This study resulted in many different views and perspectives whereas some participants found it harder to communicate virtually whereas others did not think that social interactions was not even an important factor. The conclusion that could be made from this study is that virtual healthcare meetings are good depending on which context they are used for. Furthermore, the doctor cannot always get the full picture because the camera creates a psychological distance which makes it harder for the doctor to observe as much as he/she can in a physical setting which can lead to many signals and cues missing out.

Keywords: Telemedicine, Telehealth, E-health, Remote healthcare, Digitalization in healthcare, Covid-19, Patient's perspective

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1. Introduction

Communication between people has rapidly increased in the last decade with the help of digitalization (Larsen et al,. 2006). The social interaction between people can now be upheld by people who are emotionally close but not geographically, with the use of advanced technologies which has led to a new area of communication it is now more common to communicate without meeting physically. According to (Sánchez- Polo et al., 2018) Digitalization has also reached other vital areas, it is likely that the implementation of Information systems will be the main factor to achieve innovation, competitiveness, growth in companies and in the healthcare sector.

According to Reddy & Sharma (2016), healthcare informatics has been affected by digitalization and can now benefit from many important systems such as context aware computing (collect data and adapt to the environment) and electronic health records systems etc. The healthcare sector in Sweden is also evolving and according to Social Styrelsen (2018), who is a state agency, the digitization of healthcare in Sweden is advancing with new ways of providing healthcare. There are now both private and governmental health apps which can give consultations digitally and the patients can now receive doctor care without a physical meeting, using advanced technologies such as high-definition video and audio calls (Social Styrelsen, 2018). According to Social Styrelsen (2018) the requirements to operate are the same for physical and digital consultations, such as protecting the patient's privacy and systematically providing security to patients and delivering good healthcare. Providing healthcare from distance is commonly referred to as telemedicine and the term refers to remote care and initially started with the purpose of giving remote medical treatments to individuals in rural areas (Chen, 2017).

According to Chen (2017) the rapid digitalization of society requires new technologies to reach all patients efficiently, However the concept of remote healthcare has been around since the late 19th century. Telemedicine started with a few doctors who gathered and made communications with a local drug store helping patients (Chen, 2017). In the early 20th century telemedicine had its first video call between a patient and a doctor which was called the radio-doctor (Chen, 2017). Telemedicine does not refer to a specific technology but is a broad term and the technologies focuses on making the society aware, to deliver both healthcare and health education which comes in different shapes and forms, such as remote patient monitoring, wearable devices with live update, mobile application, and virtual meetings in order to improve and broaden the healthcare services (Shree & Aswani, 2020). Telemedicine is now commonly referred to as telehealth which is the broader term

and involves more technologies to promote the doctor-patient relationship from distance (Chaet et al,. 2017).

The implementation of virtual healthcare technologies is crucial for the most fragile members of the society, the elders and the availability it gives patients to receive healthcare (Bokolo, 2020; Cheng et al,. 2020; Bokolo, 2020; Nasir et al,. 2019).
Chen (2017. p.1) describes the importance of digitalization in healthcare with the following statement “Telemedicine enhances home telehealth services as specialty care, patient consultations, remote patient monitoring, and medical education without the patients having to leave their homes.“.
According to Chaet et al,. (2017), it’s important to note that digital healthcare is not suitable for all use cases because it is hard to provide physical and emergency care, furthermore it is crucial for the caregiver to urge patients to seek physical care if needed. The patient's accessibility is also a crucial factor to decide whether the care is appropriate (Chaet et al,. (2017). An example of when digital healthcare is better than nothing is if a person is in space then it is better to receive the care rather than receiving nothing (Chaet et al,. (2017)

With the current situation and lockdowns around the world because of the Covid-19 pandemic it is now more important with digital solutions in healthcare as countries are forced to adapt to new information and communication technologies daily (Barnes,2020; Bokolo, 2020).
Even though the current Covid-19 pandemic has a negative impact on both economics and high death tolls it’s argued that it will make digital healthcare stronger with more robust systems (Robbins et al,. 2020). The use of telemedicine in times when social distance is obligatory around the world will help with overloaded hospitals and give healthcare safe from distance and still be able to reach out with the help of information technologies (Bokolo, 2020; Bokolo, 2020; Xing et., al 2020).
Another benefit of the implementation of telehealth technologies will lead to decreased costs for hospitals as it will become more flexible to examine patients from distance (Nasir et al,. 2019; Sánchez-Polo et a., 2019). Further benefits of information systems are that organizations can easily adapt in a more structured way which will lead to better general healthcare which in the long run will improve and make the organization more effective and efficient.

1.2 Problem discussion

With Telemedicine technologies becoming more commonly used in the world, research has found that empathy is reduced in digital settings which is crucial for the overall decision making (Terry & Cain 2016). The main reason to study the doctor-patient relationship according to Guo et al,. (2017) is in the context of how to create good interpersonal relationships which results in a good way to exchange vital information.
There are many studies around the world about doctor-patient social relationships in face-to-face consultations (Nasir et al,. 2019; Xing et al,. 2017; Guo et al., 2017; Saurabh et al., 2014; Chang et al., 2020; Zhang et al., 2020; Peck & Conner, 2011; Goold & Dorr, 1998; Matusitz & spear, 2014; Alizadeh et al,. 2016). However, there is a lack of research of the doctor-patient relationship in a digital setting. The scope of this thesis is the digital healthcare meetings such as the relationships and social implications (social presence) between the patient and the doctor in hospitals and health centers with the focus on the patient's perspective in Sweden which has little research about this subject.

According to Terry & Cain (2016), empathy is an important factor in the patient-doctor relationship because it increases the doctor's ability to treat the patients which increases the overall satisfaction and treatment. Because of digitalization and new technologies, we can now share anything on the internet without the social codes of empathy that are present in physical settings (Terry & Cain 2016). There are studies around the world who claim that the quality of the doctors' care is an important factor of the overall satisfaction of the meeting (Nasir et al,. 2019; Xing et al,. 2017). Terry & Cain (2016) further describes that digital communications often lack the ability to pick up emotional signals and cues that are present in a physical meeting which results in impersonal interactions which can affect the outcome of a meeting. Xing et al,. (2017) explains the halo effect which is referred to as how a person thinks about another person. The halo effect becomes relevant to digital meetings in the context of the satisfaction level that is an important factor that can decide if the patient is willing to talk with that same doctor but in a physical environment if possible (Nasir et al,. 2019; Xing et al,. 2017).

1.3 Purpose and research question

The main purpose of this study is to analyze the patient's perspective and analyze whether there is any common ground in the participants' feelings and thoughts of a virtual healthcare meeting. Based upon the purpose the following research question is posed: *How do patients perceive digital healthcare meetings and what are the implications for their social interaction?*

1.4 Delimitation

The thesis will be restricted to only participants that have been involved in digital healthcare in any shape or form in Sweden. With the scope of involving different genders and age groups if possible.

1.5 Disposition

Following the introduction, the thesis will proceed with related research being presented in chapter **(2)**. In chapter **(3)** the theory of social presence will be introduced. Followed by the qualitative semi-structured interview method and quality of the research will be introduced in chapter **(4)**. Within chapter **(5)** the result of the data collection will be presented. In chapter **(6)** the analysis and the discussion will be presented, the related research and the social presence theory will be used during the analysis followed by a discussion. Lastly in chapter **(7)** a conclusion from the study with a section with possible future research will be displayed.

2. Related research

In this section the doctor-patient relationship is explained (2.1) then the general social encounters will be explained (2.2) followed by the understanding of the patients crisis and empathy (3.2) and lastly how all these concepts connect together and brings a problem in the digital setting (3.3).

2.1 The doctor-patient relationship

The doctor-patient relationship is among one of the most complex relationships because it is often based on reluctance and involving people with different positions (Guo et al., 2017; Saurabh et al., 2014; Chang et al., 2020; Zhang et al., 2020).
According to Guo et al., (2017) the relationship is hard to understand because of ethical reasons restricting the possibility to observe easily.
The complexity does not remove the importance as the relationship according to Matusitz & spear (2014) can result in the patient's self-management behavior and health outcomes.
The importance of studying the relationship according to Guo et al,. (2017) is to create good ways to exchange information, which results in good treatment decisions.

A known sociologist named Parsons (1951), described that the relationship between the doctor and a patient is *asymmetrical* in the terms that the doctor makes the best decisions needed for the patient, the relationship can also be described as the dominant parental figure. The dialog between a doctor and a patient is not often built upon random factors and is more structured because the doctor needs to maximize the time with the patient gathering crucial information (Peck & Conner, 2011).

However other scientists have argued that a more active role between the patient and the doctor such as the patient's preferences, desires and values is needed to contribute to a good decision-making process (Peck & Conner, 2011; Goold & Dorr, 1998; Matusitz & spear, 2014). Matusitz & spear (2014) further describes that there is no correct way as patients are different in how much they want to get involved in the decision making, furthermore the ideal doctor is hard to describe because patients' personal preferences can differ significantly. Peck & Conner (2011) explains different types of decision making and patient involvements with the following four models in the relationship that ranges from default, paternalism, mutuality, and consumerism. These models are important in the doctor-patient relationship in the context of the patient's involvement in decision making which ranges

from one sided decision by the doctor to a more collaborative decision making with the patient involved (Peck & Conner, 2011).

According to Changet al., (2020) a problem with the doctor-patient relationship is trust because the doctor focuses on giving correct treatment whereas the patient focuses on the doctor's expertise. If the patient's desired outcome has not been achieved can most likely result in lack of trust in the doctor and his expertise because trust is important in all social relationships to remove anxieties (Changet al., 2020). In the middle of the complexity of the relationship many patients lie and manipulate to get a desired outcome and treatment which also makes this relationship harder from the doctor's perspective (Zhang et al., 2020)

2.2 Social encounters - Different ways of communicating

The way of communication is crucial between a doctor and patient because of many factors such as eye contact and the doctor's tone which can affect the social part of how the patient reacts, which can lead to crucial information being left out by the patient (Matusitz & spear 2014; Gallagher et,. al, 2004). The way of communication is also important in the context of scripted conversation which can lead to behavioral changes as the patient cannot always describe something regarding symptoms etc. and thinks the doctor already knows based on his/her answers (Matusitz & spear 2014).

Nonverbal communication (body language, posture, and facial expression etc.), is as important as direct communication because the commonality for doctors to meet patients with uncertainty, anxiety, fear body language will then be as important as verbal communications, in decision making for right treatment (Crane & Crane, 2010; Matusitz & spear 2014).
Crane & Crane (2010) explains the facial expression as the most powerful way of communicating information furthermore the facial expression could be linked to the patients cognitive functioning in the context of smiling or not. Matusitz & spear (2014) further argues that nonverbal communications are the important factors that can correlate to the overall patient's satisfaction with the outcome of the meeting. A famous psychologist Gross (1998), states that affect regulation is another significant factor of nonverbal expressions where the patient most likely controls their actual feelings in the context of, how and when to express them. Helping patients express their feelings whether it is positive or negative is crucial for the outcome and to give right treatments for the patient to recover correctly (Gross, 1998).

2.3 Understanding of patient's crisis and empathy

According to Davis (1983), empathy is referred to as being concerned for another human being and understanding their point of view and distress. An interesting study conducted by Alizadeh et al,. (2016), in Australia involving many participants from different countries and cultures expressed that empathy was an important factor when consulting face to face conversation with a doctor. Empathy was referred to by the participants as if the doctor really cared about them and not only treated them as a number, really listened to their symptoms and their treatment preferences (Alizadeh et al,. 2016). Furthermore, findings from the study showed that participants appreciated friendly conversation as it relieved the general stress of being present (Alizadeh et al,. 2016; Matusitz & spear, 2014). Many patients referred to empathy in the context of the doctor asked questions about their life in a manner which made them feel that the doctor cared about them, which increased the overall satisfaction of the meeting (Alizadeh et al,. 2016: Leana et al., 2018; Matusitz & spear, 2014).
Matusitz & spear, (2014) explains that "empathetic listening is" important in the context that the doctor extracts feelings and reflects to understand what the patient is really saying. Matusitz & spear (2014) further explains empathy by the number of interruptions by the doctor of the conversation, an example of this can be if the doctor interrupts more than he listens which results in dominating the conversation rather than being interested, however interruptions are not always bad depending on the context.

2.3 Virtual healthcare meetings and it's challenges

Video communication is nothing new and has been around for a few decades.
It has been used to connect with people with the purpose of reducing travel times and other expenses. Research has been conducted in this field for twenty years on how to achieve social presence by analyzing how to set up cameras to get the realest feeling possible as if it was a physical meeting (Oeppen et al., 2020; Eunmo & Mayer 2012) . However not being able to attend a meeting/ doctor consultation physically can result in problems such as lack of social presence that refers to creating realness between participants, just by being there does not prove that one is real or not (Waddington & Porter 2021; Henry et al., 2018). The importance of empathy is required for the satisfaction of the patient and the outcome, which is a crucial factor to healthcare, however being in an online environment can result in signals and cues to be devoid that are present in the face-to-face consultations (Terry & Cain 2016). Furthermore Eunmo & Mayer (2012), explains two components of social presence which are hard to achieve in a digital setting, the first one is *intimacy* and refers to the nonverbals: physical proximity, facial expression, body language, deeper connection with

more personal topics, and finally the general physical distance. The second component refers to the psychological distance in the communication between the participants and is referred to as *Immediacy* which covers *both the verbal and nonverbal communicatio*n (Eunmo & Mayer, 2012). A study conducted by Henry et al., (2018) with the focus on telehealth consultations stated that the participants felt that lack of physical contact with the doctor had a negative impact on healthcare consultations.
Gajarawala & Pelkowski (2021) Describes that not being present physically in a meeting is a problem because virtual meetings cannot provide the full story and base a diagnosis on social appearance or other factors that can disappear virtually. Leite et al,. (2020) also argues the importance of face-to-face consultations in the doctor- patient relationship to get social connections which digital meetings make harder to achieve.

3. Theory

In this section the Social presence theory will be explained and why it is relevant.

3.1 Social presence

The Social presence theory was invented by Short et al., (1976) with the perspective of social psychology. Social presence got explored when examining many constructs in the context of comparing the social climate of face-to-face communication compared to different media communication (Short et al., 1976). Social presence was referred to, if a person was perceived as real in mediated communication and furthermore stated that mediated communication could affect people's immediacy and intimacy which could affect interactions to be less personal (Short et al., 1976).

Biocca et al., (2004), introduced a new definition to social presence in interpersonal communication as the level to which a person feels another's person's intelligence, goals, and sensory impressions. Oh et al., (2018) defines social presence as subjective experience of interaction with "real person" in the context of how much access the person has to his/her thoughts and emotions. It is possible for social presence to be influenced by individual and contextual factors that impact perceptions of physiological distance between human beings in interactions (Oh et al., 2018). Oh et al., (2018) states that there is research on how and if people are experiencing presence when using mediated communication in comparison to physical interactions. All other aspects of the meeting should be equal to a physical meeting other than not being there physically, the authors state (Oh et al., 2018). Biocca et al., (2004), further explains that the satisfaction of virtual environments and teleconferencing is mostly based upon the quality of the social presence, however it is good

to note that “higher social presence” does not automatically reflect something positive because it can lead to manipulation and deception etc. Furthermore, Social presence can yield insights of nonverbal and interpersonal communication, as it can be an important factor in communication (Biocca et al., 2004). The essential attributes needed to establish connection between human beings should be addressed to find a better understanding of how humans sense mutuality, which is the basis to establish common ground in interpersonal communication (Biocca et al., 2004).

According to Molyneaux et al., (2012) using video calls to communicate can increase social presence rather than telephone calls or audio because of a more real feeling and synchronous communication. Personal identification is possible which allows the users to read expressions alongside with speech (Molyneaux et al., (2012).

The social presence theory will be used to analyze social implications in a video healthcare meeting. The theory is relevant in the context of being in a virtual meeting and how that can affect the social presence in comparison to a physical meeting. Previous studies presented the connection between the physician and the patient could affect the outcome for the patient and his/her overall satisfaction of the consultation (*More about the doctor-patient relationship can be found in Chapter 2*).

4. Method

In this section the Method will be explained

4.1 Qualitative Method

A qualitative study is an inductive approach which is defined by Bryman (2012) as the relationship between a research area and theory. The purpose of this study was to reach in depth and to analyze the social implications of virtual meetings from the participants' experiences and thoughts. According to Rashid et al., (2019) a qualitative approach enables the phenomena that is being researched to reach more in depth. Furthermore Bryman (2012) states that a qualitative approach results in understanding human behavior and the reason behind their behavior in specific situations. As the scope was to go in depth with the doctor-patient relationship and social implications during digital meetings, therefore a qualitative approach was the best choice. Furthermore, a qualitative approach fits well with the scope of this study in the context of trying to generate new findings in the area which in the future can be used in other studies to try to reach generalized conclusions.

4.2 Semi-structured interviews

Interview is a powerful method to reach depth within a subject and an interview has different approaches (Bryman, 2012). For this research, a semi-structured approach was applied. The semi-structured interview was chosen because it gives the researcher flexibility during interviews which will result in deeper discussions from the participant about the field of interest with reflections of real-life events (Bryman 2012). According to Bryman (2012) the semi-structured method is flexible because the researcher can actively listen and pick up on important subjects and ask to follow up questions based upon what is being said, however the researcher should not be intrusive. According to Bryman (2012) This style of interview also fits very well with specific problems being under investigation rather than general problems.
The scope was predefined to a specific problem and according to Bryman (2012) semi-Structured interviews are a good method to use on such defined problem areas.

The research area is built upon specific theory and previous research which the list of questions asked were built upon to make sure that the questions were relevant to the research question. The list of interview questions were thoroughly analyzed to make sure that the questions had a good standard and were reviewed and revised to achieve the desired quality before the real interviews were conducted (*see Appendix: A1*) for the full interview guide.

4.3 Data collection approach

The empirical study was conducted on individuals that had been in contact or used any virtual healthcare services through governmental or private healthcare applications in Sweden to connect with doctors. The focus was on individuals that did not seek emergency care but had medical problems which resulted in a virtual doctor consultation.
For the interview, the participants were chosen based upon relevancy to the subject therefore no random selection has been made. According to Bryman (2012) choosing participants in a strategic way will make sure that the researcher will only collect data that is relevant for the research area, which will result in better quality of the overall data collection. The participants received information with ethical aspects and general information about the research (*See Appendix: B2*). The interviews lasted approximately 30 minutes and were conducted both digitally and physically with the help of electronic tools to record the interview. According to Bryman (2012) recording an interview will help with the data collection in the shape of not missing any crucial data that could have been missed by only taking field notes.

4.4 Method Analysis

According to Bryman (2012) the qualitative approach has some weaknesses with both reliability and validity which refers to the accuracy of the study and if the study is based upon random results, furthermore reliability and validity are more commonly used in a quantitative approach. One of the main problems with a qualitative approach is the analysis of the data collected through interviews because it is hard to generalize the findings to a broader perspective other than the research (Bryman, 2012). These types of problems is something this study can address and neither does it intend to do as the primary reason is to analyze what the participants think and feel. Another weakness with a qualitative approach is that different researchers can interpret the data differently, therefore it is important that the analysis will be conducted in an objective manner to not interfere with the findings by involving emotions (Bryman, 2012).
The unstructured nature can result in deep discussions about the subject but can also lead to irrelevant talk outside the scope of the research and waste crucial time (Bryman 2012). Furthermore, it is important that the researcher knows when to lead the interviewer back to the actual problem without leading the interview in a way that can negatively affect the outcome.

The positive and flexible structure of the semi structured- interviews also brings problems with bias and expectations of the researcher because of the less structured nature and specific situations, which will most likely result in not all participants receiving the same follow up questions (Bryman 2012) . Semi -structured interviews could lead into different follow up questions being asked to different participants, however for this study the follow up questions were more general to gather more in depth data.

4.5 Participants

The table below will show some general background information about the participants where all the participants were given fictional names (see table :2).

Table 1: Overview background names of the participants

ID	**Alias**	**Gender**	**Age**	**Occupation**	**Nr of times in virtual care**
1	Ben	Man	28	Unemployed	3
2	Johanna	Female	26	Student	10+
3	Albin	Man	29	Economist	4

4	Yasmin	Female	36	Working	3
5	Chapoa	Male	27	Student	5+
6	Jocke	Male	28	Student	10+
7	Oggy	Male	31	Student	3+

4.6 Data analysis

The collected data was transcribed verbatim, and each participant was given an anonymous alias to protect their integrity and privacy. The interviews were conducted in Swedish however quotes displayed in the result were directly translated into English. Because of the Covid-19 pandemic restrictions there were both digital and face to face interviews. The face-to-face interviews were recorded by the audio only. If the interview were conducted digitally the participant would be video recorded as well with their consent, however the observation of their facial expressions was not a factor in this study and only the audio was used and transcribed.

A thematic analysis was conducted on the data which is explained by Bryman (2012) as the examination of data to find relevant themes by coding each transcript. According to Bryman (2012) the coding is done by data being broken down and given labels. This labeling was done with all the transcripts to find connections to build relevant themes. According to Bryman (2012) coding the data is efficient because it is easier to link the data with theories and previous studies to find theoretical significance within qualitative research.

The table below visualizes the different themes and how they were formed from the data. (table: 2) . The name of the theme is presented on the section “themes” whereas the “coding” section shows the different keywords which created a specific theme. Finally, example citations from the participants are shown in order to back up the creation of the theme.

Table 2: Themes that occurred from the coding

Themes	Coding	Example Citations
Patients perceptions in physical meetings	Free speech, being heard	*"physical meetings enable clearer communications."* *"Meet a doctor and discuss the reason for the meeting"*
Different expectations and feelings during a physical meeting	Face-to- Face, observation, Healthcare room, Presence, Body language, Conversation, I Don't care, Trust, care	***"****Don't care about anything other than being treated.*" "the doctor should be able to feel the situation in the room."
Hierarchy, trust, and participation in physical meetings	Trust in profession, submissive, do not question, active role, question, satisfaction, Doctor knows best, studied to be a professional.	*"The doctor knows best because he or she has studied."* *"The doctor has to earn his trust by proving knowledge and care."* *"Even if I would want to question I won't because I don't have the required knowledge to do so"*
Social Presence & Empathy	Not knowing, No control, Doctor's focus, Negative, Positive, Empathy	"Can't feel the surrounding of the environment." "doctors belittle your problems." "Facial expressions are important"
Hierarchy, trust and participation in physical meetings	Confidence, Trust, No participation, Question	"I feel that it is easier to get involved in virtual meetings." "I trust the doctor profession therefore I won't get involved"

4.6 Research quality

The importance of ensuring good quality in the data collection and the data analysis was crucial. The quality of a research usually refers to the reliability and the validity of the study, however according to Bryman (2012) these terms have some problems when it comes to qualitative study and are more common in quantitative studies. Therefore Bryman (2012) introduces the terms *trustworthiness* and *authenticity* regarding qualitative research which will be used in this study.

4.6.1 Trustworthiness

According to Lincoln & Guba (1985) Trustworthiness is divided into four criteria's:

1) *Credibility* must be established to verify the findings this can be done through submitting the research to participants being studied in the social world. The reason to do this is to make sure no bias has been involved and that the researcher has understood the social world being studied accurately (Bryman, 2012). To ensure credibility the final version of the thesis was sent out to the participants.

2) *Transferability* refers to the extent that the qualitative research findings can be linked to other settings with other participants Bryman (2012). In this study related research has been displayed to provide information to better understand the research area.

3) *Dependability- refers* to that if other researchers were to look at the data collected they would come to similar interpretations and conclusions (Bryman, 2012). To ensure dependability the data collections and the data transcribed was shared with the supervisors and examiners to analyze the data.

4) *Confirmability*- refers to the extent the findings are based upon the participants words and not on the bias of the one analyzing the data Bryman (2012). To ensure this it is good for the researcher to check his background and how that can influence the outcome of the study. As a researcher I do not have any previous connection with the subject nor the participants regarding the research area to get emotionally involved with the subject that could change the outcome of the participants' answers.

4.6.2 Authenticity

Authenticity is self-reflective thought-provoking questions that the researcher should ask (Bryman, 2012). According to Bryman (2012) *the following questions need to be asked during social research*: does the research reflect different viewpoints?, Is there a deeper understanding that helps the members to understand their social milieu? Can the research help other members to understand and appreciate different views on the subject? Has the research engaged the members to change circumstances?

Authenticity has been partly ensured in the context of asking reflective questions during the whole process to deliver a high-quality thesis with structured literature review with connections to the analysis of the data collected, which can help the reader to understand the subject in depth.

4.7 Ethical considerations

Ethical considerations are important in social research and it is the researcher's responsibility to make sure that the study is conducted in a good and respectful way (Bryman, 2012).
To make sure the study follows the ethical considerations in social research Bryman, (2012) introduces four principles:

1. *Is there any harm to the participants?*
2. *Is there any lack of consent?*
3. *Is there any invasion of the privacy of the participant?*
4. *Is there any deception involved?*

According to Bryman (2012) The researcher must be clear with the participants from the start by stating what the research is aiming against and how the data will be collected, used, and stored. The participant is in charge and decides whether to participate or not furthermore, it is the researcher's responsibility to make sure to guarantee full anonymity and that no psychological or physical harm can be made against the participant (Bryman, 2012). The best way to guarantee consent is by a written letter including all information about the research which should be signed by both parties before going further with date collection (Bryman, 2012).
To ensure the ethical considerations no data was stored in a way that could harm the participants. The transcribed documents did not include any real names or facts that could be directly linked to a specific participant and fictional names were given to each participant.
A form of consent was given to every participant including all facts about how the interview was going to be conducted and how the data was stored and used. Before every interview the interviewee gave a verbal consent and was also informed that he/she could withdraw and leave the interview at any time (See consent form: Appendix: B2)

4.8 Literature Search and Review

According to Bryman (2012) it is important to collect previous knowledge within the field of research with a literature review. The main database used to collect previous research was *Business Source Ultimate*. The database provides functions that offer the ability to narrow the search with filters such as peer review, language, year and finally add different keywords to specify the search. These functions were crucial for the research to find both wide and narrow articles on the research area. According to Bryman (2012) keywords are the core fundamentals that can strengthen the search to find relevant articles to the research area. Other databases such as *Google Scholar* and *ScienceDirect* were also used as additional tools to search for articles.

Sometimes no database filters were used because of the risk of filtering out important articles that could be relevant but were outside the scope of the specific search. This study consists of scientific peer-reviewed articles and other relevant publications. All previous research was analyzed to guarantee both quality and relevancy within the field and focus has been on both new and older articles to address all relevant aspects of the research field to this study. In addition to the articles relevant methodical books were used. Nonscientific references Social styrelsen was used because of the relevancy to Sweden's digitalization in healthcare and digital healthcare meetings.

Few examples of search terms used “Doctor patient relationship*” And” Digital meetings” OR “virtual meetings*”. Another search term could look like “Telehealth” OR” virtual healthcare” or “Telemedicine” And “problems'' And “Covid-19” which normally would narrow down the search specifically to 10-30 relevant articles.

For general information about the subject broader search strings was used like “telehealth problems'', “telemedicine”, “digitalization in healthcare”, “virtual healthcare meetings*” . The combination of important searching strings with filters on peer review and specific timelines resulted in articles that covered the research area.

Keywords used.

- Telemedicine
- Remote Healthcare
- Digitalization in healthcare
- Healthcare
- Covid-19
- Doctor patient-relationship
- Telehealth
- E-health
- Qualitative
- Semi structured-Interviews

5. Result

In this chapter the result from the interviews will be presented.
The different themes brought up are connected to the coding shown in table:2 located in chapter (4.6)

With the following research question: *How do patients perceive digital healthcare meetings and what are the implications for their social interaction?* The result presented will also raise awareness of physical healthcare meetings because it will help to understand, which crucial factors are missing in virtual healthcare meetings during the analysis.

Table 3: Overview of the themes and description

Themes	**Description**
Physical healthcare meetings	
Patients' perceptions in physical meetings	It is important to understand how patients perceive healthcare in physical meetings to understand the social implications in digital meetings.
Different expectations and feelings during a physical meeting	The participants described what they thought were crucial in physical meetings with the relevance of understanding if any social implications occur in virtual meetings.
Hierarchy, trust and participation in physical meetings	It is important to understand what "roles" the patient takes in the conversation, whether they just trust a doctor just based upon him being a doctor or they take a more active role and try to involve themself in the treatment plan that the doctor is planning and accept everything the doctor says.
Virtual healthcare meetings	
Social presence & empathy	Social presence and empathy refer to social interactions between the doctor and the patient and how it can affect the view on what is empathetic and what factors can make the patient feel reduced empathy by the doctor.
Hierarchy, participation & Trust in digital healthcare meetings	There are factors that can affect the way the patient gets involved in his/her healthcare session and in what way it can differ from a physical setting and the way it changes when not present physically.

5.1Physical healthcare meetings

The following section will provide the results of how the participants feel is important in physical healthcare meetings where different perspectives and thoughts will be presented.

5.1.1 Patients perceptions in physical healthcare meetings

In this research one of the first questions asked to the participants was how the participant described the key characteristics of a physical meeting between a doctor and a patient. The concept behind this question was to reach mutual understanding of how the participant described and understood the subject on a physical level to connect with it on a virtual level. Most of the participants had similar definitions and understanding that the meeting is straightforward, stressful, and informative and connecting with the doctor to solve a health problem. Three of the interviewees had good descriptions, firstly Johanna describes the doctor consultations as a place where you go and describe your problems to a person that listens and cares about your problems to find a relevant solution.

Johanna - *"A physical meeting then, I think that you as a patient go to the doctor and explain your problems or if there is something you need to discuss with the doctor about, and the doctor is there and absorbs and listens as much as possible*
To examine and write prescriptions if needed".

Johanna is talking about the importance of the doctor listening to the patient to continue with the correct steps of treatments. However, Johanna is not alone with this definition whereas Ben's definition was simple, powerful, and straightforward.
Ben: *"Where i meet a doctor in a healthcare room to discuss the problem that I'm facing"*

Lastly Jocke agrees with Johanna but has another way of reflecting about the subject. And he states that the doctor is someone who looks and talks with him and is physically present in the room to understand the patient's distress and point of view.

Jocke: *" A physical doctor meeting is known as the doctor talks and looks at me and I tell the doctor what my issues are and what I feel and that also the doctor can observe me by my presence in the room".*

5.1.2 Different expectations and feelings during a physical meeting

This section covers important factors and expectations in physical healthcare consultations raised by the participants.

There were many notable different perspectives regarding what was important for the participants individually, to feel that the healthcare consultation was rewarding.
Most of the participants stated that they felt more secure being in a physical environment in the context of being in the environment and feeling the situation. Not only did the participants state that they had the ability to “read” nonverbal communication and body language, but it was also easier for them to feel that they were being taken seriously. Patients appreciated if the doctor interacted with them socially rather than strictly going to business and trying to solve the problem. Spending some short amount of time conversing generally to make the patient feel more comfortable in the context of being in a new environment was appreciated. This is because most of the time the environment is negative, and the patients were in an anxiety state because of the uncertainty of the situation. However not all the participants agreed with general conversation and thought that they were only there to get their problem solved and nothing else was needed they felt.

A statement by Ben “If you meet a person physically you can get another feeling and can read the situation more accurate with body language”.

Johanna further describes that the feeling of being there physically helped with having more control over the situation and being taken seriously by the doctor. Johanna also stated the general importance of a physical meeting most likely can lead to the doctor observing accurately. She further stated that she felt it is the doctor's responsibility to make sure that correct treatment is given, and this can only be done if the doctor can feel the environment and observe in a physical setting.

Johanna- “I feel like I’m being heard when the doctor sits in front of me and when I can see him/her in reality which makes me feel safe and I can also have a physical examination if needed”.

Being treated with respect by the doctor was important to all participants to put trust in the doctor to make right decisions which would have positive outcomes. The way that the participants felt like they were being taken seriously was in the context of the doctor asking "follow -up questions" to the participants in order to gather as much information as possible, for the right treatment decisions according to the majority of the participants. Chapoa described the importance of the doctor being able to see the patient if something is not right and try to ask more questions to follow that up, so no crucial information is missed.

Chapoa: *"What it means is that the doctor should be able to feel the situation in the room. An example, if my doctor asks me how I feel and how I have been lately, especially during the corona pandemic. And if I answer in a way that the doctor is not comfortable with then he will ask to follow up questions to resolve the situation and not be happy with a general "I'm good" answer. In this context the doctor has done a good job to read the situation and you can do the same with the doctor to see if he cares or not based upon the questions he is asking, and this is important for me."*

Jocke's point of view was interesting, empathetic and "reflective" and stated what he thought were the doctors' responsibilities during the healthcare consultation. He described an interesting scenario and talked about how humans generally are different when it comes to communication and expression, especially when it comes to meeting a new person you've probably never meet before could make some people shy and unable to express their problems, or if the patient had some mental problem and just sits with their head down and not providing any information. Therefore, the doctor should make sure that the patient is comfortable and lighten the mood and thereafter collect relevant information regarding the healthcare consultation.

Jocke: *"Some human beings are socially trapped, and they might not talk out fully until the doctor uses social jargon. The patient will have more connection and feel that it is easier to talk about their problems, this is something I have experienced that the doctor joked a bit and is easy-going and that makes me more comfortable and it's easier for me to express my feelings, talk and feel like this is a place i can talk and be free and express anything i want without being ashamed or disrespected. "*

In the context of different views and expectations, two of the participants Albin and Oggy strictly stated that they did not care about anything other than solving the problem. However, they stated the importance of the doctor listening to their problem. But did not feel any positive outcome of general conversation that "makes the patient more

comfortable". They were not there for any empathetic talk and rather rejected this approach by the doctor and felt it was not the doctor's responsibility to do so either.

Albin: *"I do not feel that my physical presence benefits anything except that I'm in front of the doctor, that might be a plus on the edge."*

Albin further extends this and talks about him only being there for care and nothing more and does not care to have any friendly conversations and that the consultation should be spent with the actual case and solving the problem rather than have any connection. He further states that he never even thought about this matter on a personal level and keeps the conversations only linked to matters of the consultation.

Oggy agrees with Albin's words and further extends that the doctor should give care and not feel for the patients and remain objective. He stated that the more you talk about your life or other aspects that are not relevant to the consultation, could lead to relevant conclusions made by the doctor such as the doctor connecting the patient's problems with "psychological" factors which could make the patient angry if he knows that it's not a correct conclusion.

Oggy: *"a doctor should provide care, a doctor should not feel for you and doctors should find out what your problem is and how to cure it. This is where you should spend important time on the actual problem so that the conversation can lead to inventing something else which is not true."*

5.1.3 Hierarchy, trust, and participation in physical meetings

An important topic was the way the patient interacted with the doctors in a physical meeting. The way they got involved or involved themself was similar for most of the participants. Three of the participants felt like they trusted the doctor and his decision of a "treatment plan" based on that the doctor knows the best and took a more submissive role and accepted the treatment plans given.
However, most of the participants felt like they needed to take a more active role to feel important and sometimes question the doctor's word and involve themselves more. Because they felt that they knew themself better to know if their "symptoms" was unusual and had to show the doctor that they know what they are talking about. So the doctor couldn't take a dominant role and run them over which could result in a lack of satisfaction

from the patients perspective in the healthcare meeting. The doctors had to prove that they cared in order to receive trust, in order for the patient to drop the questioning “role” against the doctor. This was done through the social interactions and the doctor had to show empathy to receive trust for them to feel that he is there to help “them” and not only trying to get rid of them fast to meet the next patient.

Albin, Oggy and Jocke took a more submissive role in the doctor patient relationship consultations. They felt that it was obvious for them to trust the doctor because they have studied and are licensed doctors. And that the doctor had experience and knew more about medicine and healthcare consultations. Therefore, they felt that it was not their role to question the doctor's knowledge. Jocke stated that his knowledge is not as good as the doctor and is in no position to question the doctor.

Jocke: *“Sometimes it feels like the doctor knows best and then I just say ok ok ok. And if a doctor takes a specific decision, then I probably do not have the required knowledge to question that. If the doctor is educated in the area and has previous experience with other patients, you won't question even if you feel like doing it because of the lack of knowledge you have.”*

Albin had similar opinions and stated that he did not want to question the doctor's opinion because he/she has studied medicine and should be trusted and believe that the decisions made by the doctor are the correct for the treatment.

Albin:*” I don't feel like I'm participating in any decisions, and I probably did not want to question the doctor because I feel like that is not my responsibility to, if I don’t feel that something is very wrong. He is the doctor therefore I must trust because they are educated to give correct treatments and they can more about medicine than me”.*

Just like Albin, Oggy had similar feelings that the doctor was in control of the situation. However, Oggy stated a few situations where he would not give full control to the doctor. An example situation could be if the doctor is not attentive and asks the same questions repeatedly which could result in the situation feeling less serious for him.

Oggy: *“I would have to trust his judgment because he is a doctor, and if I seek healthcare, I will be submissive to his knowledge, however if I feel that the doctor is not attentive or distracted and does not understand what my problem is and asking the same questions over and over again which i already have answered, then i can get annoyed.”*

Other participants took a more active role during consultations and questions and discusses with the doctor because they felt that they also know important facts and know themself in

a way that the doctor does not. The participants would not leave the doctor's office before they were satisfied with the outcome of the consultation. This active role was necessary because of previous experiences with doctors where they felt that the doctor did not include them, and they took a more submissive role which had resulted in bad experience and bad results. Yasmin specifically expressed the importance of questioning the doctor's healthcare in every step-in order to be heard and to be respected as a human being.

Yasmin: *"I question every decision and thought and way of working to see if it is relevant to the problem I have.*

Whereas Chapoa felt like the involvement of a patient's healthcare plan lies in the hands of the patient. And the patient should not focus and think that the doctor knows the best because of a license, furthermore he stated that the patient must do his own research as well and not accept everything the doctor says if he believes it is irrelevant.

Chapoa: "I *feel that I am involved in every decision made by the doctor. If the doctor takes every decision alone then something is wrong. As a patient you must be present and responsive but also make sure that you have control over your own health and if you do not control your own health then you do not know which decisions are being made. A doctor should explain all steps taken and motivate them and if you let a doctor take all decisions will result in that you don't control your own life*".

Chapoa took the matter a step further and connected the healthcare session as a crucial moment of your life. Because he stated that when an individual has a problem, he must find the correct solution and not be happy with the first best solution offered by the doctor. Showing your involvement will help the doctor with more information and can result in a more satisfied and relevant outcome, he said.

5.2 Virtual healthcare meetings

This section of the result will focus on virtual healthcare meetings and the social interactions experienced by the participants including different perspectives and thoughts.

5.2.1 Social presence & empathy

Most of the interviewees stated that digital healthcare meetings are troubling in the context of not showing the full picture. The lack of social presence could lead to the doctor not taking the patient as seriously as if the meeting were conducted physically. Most of the body language disappears in the digital setting such as energy between two persons and the realness of talking and feeling for a "real" human being. The sense of not being there physically or if the doctor were nonchalant towards them or did not have eye contact during consultations could lead to them feeling that the doctor did not care about them which could be seen as lack of empathy. Furthermore, some of the participants felt like they lost control over the situation because they did not know what the doctor was focusing on in the background. And because of that not getting the full picture because distractions that could occur in the background which they had no knowledge about and knows which could affect the outcome. Furthermore, not knowing the name of the patient or previous history could also be seen as if the doctor does not care. They believed usually that the meetings were faster so there was no room for feeling or conversation which could be seen as a stressful meeting. However few participants did not care about any of the social interactions or social conversations and never ever cared about anything other than their problem being solved, however they agreed upon that empathy could be shown through the doctor's involvement and asking relevant follow up questions.

Yasmin talked about not knowing the whole picture of the consultation. Where she said that she wanted to see the doctor's environment other than what is going on in the camera.

Yasmin: *"Not being there physically affects because I don't know what's in the background because i can't see the full picture and I'm not sure what the doctor is focusing on because i can't feel the surrounding and limitations of being in a physical room"*

Ben further extends Yasmin words but adds the context of human beings needing a physical connection and that a doctor can't read the body signals of the patient virtually.

Ben: *“First I would say that for us human beings it is important with physical connection that you can't get virtually because it’s another thing when you meet a person, you feel a sense of energy. Virtually you are behind a screen and I miss the part of building a person's chemistry. If you meet a person in real life, you can see if that person does not feel good based on body language or if he is absent then u know something is wrong. These aspects can disappear”.*

Jocke further extends Ben's word and adds that the lack of social presence can result in the doctor trying to belittle your problems and not taking as much responsibility because he is not obligated to, because he can't give the same care virtually and he knows it.

Jocke: “Yeh some of the aspects of the physical consultation stay but I believe there is no deep feeling of being close feeling and creates a disconnect. This can lead to me as a patient not receiving the help I need, and the big picture decreases significantly. Because when you are in a physical meeting the doctor is obligated to find a solution to the problem but when you are in a virtual meeting the doctor can belittle your problems because he does not feel the environment”.

Jocke felt the importance of being there physically to be seen as a human with a real problem other than that you are behind a video call and must “prove” that you have a problem. Which could lead to the doctor trying to quickly solve the problem or give some medication he thinks can help rather than saying “I don’t know the problem and you should come for a physical consultation instead. Sometimes he felt that the doctors were not present in the digital consultations or maybe said” I will check up on you in two weeks then we can book a physical meeting”. Johanna felt just by the doctor being there is seen as empathy and that the doctor is willing to help.

Johanna: *“facial expressions are important to me when i see the doctor but just by the doctor being there feels like he’s showing empathy towards me, however in a camera the doctor cannot feel and observe the same as real meeting, because you only show your face”.*

Furthermore, Albin did not care about any social problems and stated that there were no social problems with digital meetings and stated that he did not care about empathy in these settings. He would rather keep the meeting objective.

Albin: *“There is time and room for social interactions or connections which mostly won't affect the outcome and are irrelevant, I’m not there for any conversation or to lighten the mood and the doctor should be straightforward with giving healthcare and i don't believe any nonverbal communication can help me”.*

Oggy took Albin's words further and believed that empathy and irrelevant talk could harm the outcome because the doctor should not feel for the patient or have any connection other than listening and remaining objective. Because he felt it could be negative to the consultation in the context of the doctor may be getting too comfortable and making assumptions.

Oggy: *"Too much social interactions and talk and the doctor's feelings can result in the doctor thinking he knows you and tries to make assumptions, therefore I don't care about social presence because it's irrelevant to the outcome."*

Johanna stated a negative side of not being present physically and not being observed. She stated that patients could make anything up and the doctor could not feel or sense if the arguments were valid. The body language and other aspects were easy to hide, she stated.

Johanna: *"Now i don't know if this is relevant but virtually you can stay stuff that is not accurate and lie which can affect because the doctor can't observe if it's the truth or not"*

5.2.2 Hierarchy, participation & Trust in digital healthcare meetings

An important part of digital meetings was whether the participants felt like they could get involved in the healthcare consultation process or in the decision-making regarding treatment plans. The opposite of getting involved was a "submissive role", based upon not being physically present which could result in the doctor taking over and leading the consultations too much rather than involving the patient.

The results from the interviews showed that some of the participants liked to get more involved in the healthcare consultations rather than being led and "dictated". They got more involved because of the feeling of being distant removed the barriers and boundaries and raised the confidence. The environment made it easier for them to question and discuss different options with the doctor. The shift of hierarchy in virtual meetings made the participants feel that the doctor had to "prove" his expertise to receive trust rather than automatically receiving it for being a doctor. The trust could be increased in the way that the doctor showed his/her interest in the patient and asking relevant questions which showed his/her engagement.

Furthermore, some of the participants felt that they did not feel the need to participate because they trusted the profession and only cared about being present. The digital healthcare meeting had many pros and cons in the context of being detached from a real person which had a confidence boost in “questioning” and participating/ asking more questions.

However not all the participants agreed that a virtual meeting is different from being in a physical healthcare meeting. Oggy focused on the positive effect of the social interaction where he stated that he was satisfied with most of the outcomes in the meeting because he could ask more questions and was more confident than in real life but other than that nothing was different, he felt.

Oggy*: “In an online healthcare meeting I can participate more and ask more questions regarding the situation easier than a physical meeting, so for me it has been a good experience. In a physical meeting I usually do not ask many questions but in virtual meetings I feel more.*

Chapua stated positive feelings towards online meetings in the context of not feeling any hierarchy in the meeting or being ashamed of asking questions that he might not have asked in real life. He felt that not being at the consultation physically resulted in him being more comfortable.

Chapua: *“When present physically it’s harder to question and if you have a question that you think sound stupid, you will still ask that question because you are in your own environment at home”*

Furthermore, Chapua stated some important factors he thought were more important in a virtual healthcare consultation. Firstly, he stated that the doctor should listen more and be active, Secondly, he stated the importance of the doctor not being “arrogant” and thinking he knows the best in every situation.

Johanna also had a positive experience and felt she was being respected in virtual meetings whereas the doctor’s she has met have been inviting and respectful and discussing different options “treatment plans” that could be better for her.

Johanna:” *They can't examine me physically, but they can explain steps and processes and answer my questions which are important factors to feel involved”*

Jocke extended Johanna's word and explained the importance that the doctor is inviting and involving the patient. Because the patient might be in a negative and stressful state of mind, therefore it is important for the doctor to discuss what is going on and what the next step is and be open for his input in the discussion. He also thought that the doctor should ask good questions and give certain general diet tips and what to do if that is needed. This made him feel involved in the process with open dialogs.

Jocke: *"The doctor should include me and take his time to explain all steps ask questions, ask for my opinion give tips related to what i seek care for to improve my diet, make me feel that I'm important ant not just a number because we are virtual"*

Ben thinks that virtual environments make it harder to question and participate. The meetings are usually faster and there is no room for extra talk and not seeing the person physically is a problem for him and results in harder to participate. *Ben: "I think in the virtual world it is harder to question." Decisions can come faster".*

Albin did not think that virtual meetings differed anything from physical meetings in the context of trust to the doctor. He stated that he trusts the profession without his input. He believed that the doctor has studied and knows more about medicine and has more experience. Therefore, he did not feel that he was able to question or disbelieve and that the doctor took the correct decisions.

"I haven't had any need to question and thinks that the doctor takes the right decision based on his knowledge because I have no knowledge of medicine".

The participants thought that the social barriers from not being present could help them to take control over their own healthcare rather than accepting everything virtual meetings could sometimes contribute to a deeper understanding of decisions as they expected doctors to take a more involved role in explaining steps. The aura of the doctor controlling everything simply did not affect as strongly as being in a room where you could sense the vibes.

6. Analyse and discussion

In this section the analysis and the discussion will be presented

6.1 Patients perceptions in physical meetings

The result has shown that the participants share similar views on what to expect from a physical healthcare consultation and going into the discussion it is important that they reflect about physical perceptions to see what is lacking or if something is lacking according to them in a digital meeting. The importance of doctor listening was brought up several times in the interviews, but they also felt that the meetings should not be irrelevant to the subject.

6.2 Different expectations and feelings during a physical meeting

From the interviews it was possible to notice the complexity and the confusion around the expectations of healthcare consultations. The participants shared different expectations and feelings regarding the visit. Some participants gave the doctor much responsibility in the social interaction to make them feel comfortable whereas others did not care about anything else other than receiving the correct treatments. These reflections goes hand in hand with previous studies acknowledging the same outcome and stating that indeed the doctor - patient relationship is a very complex relationship to study because it mostly involves people with different positions (Guo et al., 2017; Saurabh et al., 2014; Chang et al., 2020; Zhang et al., 2020). These different positions made it clear that there is no correct way to handle the “relationship” socially.

Patients felt secure in a physical environment because they could read and feel the environment which resulted in them feeling that they were taken more seriously. At a physical healthcare consultation, you can see the engagement of the doctor and how he behaves such as eye to eye communication, facial expressions or other nonverbal cues which will help the patient to feel he /she is in good hands. Because not every clue is communicated directly but can be from an observation that could lead to a question and new information comes up. According to Crane & Crane (2010) Facial expressions are the most powerful way of communication and exchanging information in a cognitive way. Furthermore nonverbal communication is further discussed in the context of being common as patients can be in uncertainty, anxiety and fear therefore body language will be just as important as verbal communication (Crane & Crane, 2010; Matusitz & spear 2014). Not all

patients can be open and talk about everything just because the doctor cracks a joke to lighten the mood.

Participants therefore felt that it is the doctor's responsibility to make them comfortable. Matusitz & Spear (2014) states the importance of the way that the doctor communicates, and the same model might not work with every participant. Scripted conversation could lead to bad outcomes in the context of the patient strictly answering the questions and not reflecting and leaving out crucial information (Matusitz & Spear 2014).

Therefore, the participants felt that the doctors needed to be open and adapt based on the situation. Having more control of the situation is about feeling that the doctor wants the best for the patient. Creating this open environment helps the patient to relieve more information that could be left out. Gross (1998) states the importance of helping the patient to express their feelings whether they are positive or negative. Some patients do not show their emotions as they happen, called "affect regulation" and try to control their feelings, which could give the wrong impression to the doctor that something that might be wrong is not "shown" or expressed by the patient.

Being in a situation as a patient when the outcome is unsure requires much respect from the doctor. As Matusitz & spear (2014) stated that a good relationship between the doctor and the patient can result in the patient's self-management behaviour and future health outcomes. The way a doctor interacts with patients could lead to more accurate outcomes as if the doctor took his responsibility and both observed and listened carefully the patient would feel more comfortable to talk openly about his/her problems. It is good to note that this is not something that is obvious to all patients, just because an individual visits a doctor does not mean that they have the courage to talk openly. Matusitz & spear (2014) states the importance of knowing that all the patients are not the same, and there is no correct way to describe the relationship, therefore it is important to take the situation as it comes.

6.3 Hierarchy, trust, and participation in physical meetings

Being able to feel as if they are involved in the process was important for the participants whereas three participants (Oggy, Albin and Jocke) argued that the doctor should have full authority to do whatever he wanted in the context of treatment, because they felt that the doctor knew the best. These participants thought that the doctor's profession should be respected and trusted to take the right decisions for them in a given situation. You can argue that they took a submissive role in the context of trust just because of his profession, and that they felt they did not have the same knowledge as him. This point of view can be linked to Parsons (1951) statements that the doctor patient-relationship is asymmetrical in the terms that the doctor is the dominant parent.

Changet al., (2020) argues the importance of trust in all relationships and most likely the patient focuses on the doctor's expertise and the doctor focuses on treatment of the patient. Either way by not involving in the process can be seen as the patient is focusing on the doctor's expertise which can indirectly result in lack of trust if the outcome is not as the patient hoped for.

The other perspective of the doctor-patient relationship was argued by the rest of the participants where they thought that the doctor had to work and prove his skill and knowledge. This was done by asking questions and getting involved to find out why a doctor takes a specific decision. Getting involved and collaborating with the doctor to a result/outcome seemed important because he basically had their lives in his or her hands. These reflections could be linked to a more updated and relevant statement than Parsons (1951) way of thinking. The importance of an equal role has been argued by many scientists; they state that the doctor should listen to patients' preferences, desires and values in order to reach mutual understanding and efficient treatment (Peck & Conner, 2011; Goold & Dorr, 1998; Matusitz & spear, 2014).

Surely those who took a more submissive role in the doctor patient- relationship and let the doctor decide everything also felt that these aspects are important however, those participants did not state this in this research. Chapua even argued that it is the patient's responsibility to engage in a more equal conversation and not only give the responsibility to the doctor. Surely not all responsibility can be on the doctor even if he is the professional and some aspects must be brought up by the patient as Zhang et al., (2020) argues that there are people who lie to get the desired outcome which makes this relationship harder. Which furthermore results in the doctor must show some authority at some point to make decisions even if the patient had some inputs. There is a time limit, and the doctor cannot observe everything.

6.4 Social presence & empathy

Not being able to get the full picture was an issue for most of the patients, they felt that most of the body language disappeared which could be crucial information for the doctor. The importance of feeling that the doctor takes a patient seriously is important as it felt as if they sometimes were not in control over the situation. This could be seen as a problem with the lack of social presence which is defined by Biocca et al., (2004) as the level to which a person feels another’s person's intelligence, goals, and sensory impressions. This can be a problem when a patient is talking about his/her problems through a video call.
You cannot be sure what the doctor is doing in his environment which you have no access to. You can see that he is looking at you but nothing else as you cannot read the situation from a video call. Molyneaux et al., (2012) argued that video calls can increase social presence as the information is synchronous between the patient and the doctor where the user can read some expressions. However, in the context of this research not all the

expressions can be read through a video call which is focused mostly on the face as it is unlikely the camera setup is not good enough to film the whole body of the participants to get the real feeling and serious feeling in the meeting,

The lack of physical connection could lead to not being able to perceive the consultation the same way, as in a physical environment you are able to feel the energy, the vibes in a room and the general feeling of the environment from each other which could lead to important connections and information the patient was scared to share, to being shared.
Eunmo & Mayer (2012) explains two important components in social presence which are hard to achieve digitally called intimacy which is nonverbal expressions and the second one is immediacy which is referred to as psychological distance between communicators. This is clearly something that can be linked to most of the participants as they felt that the meeting did not always feel real in some aspects and a doctor meeting should feel real because it is a serious matter. Crane & Crane, (2010); Matusitz & spear (2014) argues that nonverbal communication is important because not all patients can express themself because they are in a fearful state. Crucial information could be left out by the lack of social presence which could affect the outcome (Crane & Crane, 2010; Matusitz & spear 2014). There could be more room for assumptions in the consultation which could distance the doctor from the actual problem based upon not being present.

It is also valid to argue that problems with nonverbal aspects which most likely affect social presence could decrease “empathy” from the doctor, because the patient cannot feel the environment. Empathy was something important in physical meetings and was defined by Davis (1983) as being concerned for another human being and understanding their point of view and distress. Maybe it is harder to understand something when you are not present in the room. However, empathy and presence were not important for all patients and some felt just by the doctor being there was seen as empathy. Others thought empathy could affect the outcome negatively and that the doctor should only be objective, however you could argue that these statements are still connected to empathy in the end as on some level the doctor will most likely always be emphatic towards the patient. The ones who did not care about empathy or presence could be linked to Alizadeh et al, (2016) definition of empathy as if the doctor cared and listened to their symptoms and preferences. Bottom line people felt that the doctor knew he could not solve everything, which most likely was true because of the digital environment.

6.5 Hierarchy, participation & Trust in digital healthcare meetings

In contrast to physical meetings, it seemed that some participants got more involved which could be seen as the result of lack of social presence. People were more comfortable in their own environment which created a distance from the doctor as a professional and he became more of a regular person which you could discuss and get more involved. This could be seen as the positive side effect of lack of social presence which is defined by Biocca et al., (2004) as the level to which a person feels another person's intelligence, goals, and sensory impressions. It could be that the lack of not being there physically and feeling the environment can lead to people being more comfortable because of the distance of "reality". Questioning can also be seen as a lack of trust and not automatically trusting a person they do not know, and the doctor has to "prove" his skill and knowledge. Terry & Cain (2016) talks about the importance of empathy and that it can be the factor that patients feel that they were satisfied with the meeting. The empathy can be seen as a way of the doctor receiving trust in his profession which could lead to a more equal hierarchy in the meeting.

6.3 Method discussion

A semi structured qualitative approach was suitable for a research where the purpose was to get a better understanding of the subject. The interviews take a lot of work to conduct and analyse and there are no right or wrong answers in the result. However, it is good to note that this approach cannot prove any statements or generalize to a broader perspective.

7. Conclusion

This thesis started with the subject of telemedicine and focused on how virtual healthcare meetings affect social aspects in meetings and if these aspects can affect the outcome, and in what way.
The theory presented in this study was from previous research combined with the theory of social presence.
Social implications that could occur were most of the times caused by verbal communication could be absent in digital meetings and the real feeling of meeting a person in contrast to a physical meeting. Based upon this study the participants had conflicted views in some parts such as that social factors should not be a factor in a healthcare setting because you are there for healthcare, whereas others thought it was important to connect with the doctor to feel that they got the care they deserved. The study also focused on how participants interacted in a physical meeting compared to a digital meeting to see how much the involvement of the healthcare process differed whereas some participants felt that they got more confident to be involved and question and discuss with the doctor in a digital setting whereas others felt the other way because of being distant and that the doctor took more control. Social presence affects signals / feelings being missed which can lead to important observations and factors to be missed in digital meetings.
Surely there were conflicting opinions but the conclusion that can be made is that most likely digital meetings will not tackle the serious and hard problems, therefore the social implication would not matter in a critical or in a way that can affect danger to any lives based upon this study.

7.2 Future work

Based on this study we are now more familiar with social factors in digital healthcare meetings and how they can affect the outcome and the limitations of a video call. These limitations can be taken into consideration when designing new digital healthcare platforms to maximize the use case where digital meetings can work more efficiently. However, it is important to notice that this study is only based upon the participants perspective and it is important to analyse this phenomenon with a broader and international perspective as the use of virtual healthcare is getting more popular because of various reasons in the world. A survey could be conducted to generalize and build upon these findings. It is also possible to also include the doctor's perspective whereas important perspectives can improve design of new technologies.

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Appendix

Appendix A1: Interview Guide

[Allmän information]

Innan vi drar igång intervjuer är ett bakgrunds frågor men vissa kommer låta självklart men du kommer få chansen att uttrycka det.

[Bakgrund]

1) Hur gammal är du?
2) Vilket kön definierar du dig som?
3) Vilken är din nuvarande sysselsättning?
4) Hur frekvent söker du vård?
5) Har du erfarenhet av virtuella möten sedan tidigare?isåfall hur många gånger?

[Huvudfrågor]

Upplevelse av skillnader i interaktion mellan läkare och patient i fysiska världen

- 6). Hur beskriver du att ett fysiskt möte mellan patient och läkare går till?
- 7. Känner du att din fysiska närvaro hjälper dig att känna dig trygg i miljön? isåfall hur?
- 8. Påverkar stämningen av att vara fysiskt närvarande att känna vissa känslor och att uppfatta läkaren som empatisk?
- 9) Känner du att icke - verbal kommunikation är minst lika viktig som verbal och att läkaren bör vara observant?
- 10. Känner du att du har varit delaktig i besluten som doktorn tar? isåfall hur?
- 11. Hur känner du för att läkaren även konverserar om ämnen som inte har med besöket att göra? exempelvis socialt och gör det mer avslappnade?

Upplevelse av Social Närvaro

- 12. Hur upplever du läkarens nivå av tillmötesgående gentemot dig mot virtuella rummet jämfört när ni träffas o ses i fysiska sammanhang?

- 13. känner du att läkaren är närvarande eller saknar du någonting?

- 14. Upplever du att läkarna är uppmärksam i det virtuella rummet till skillnad från ett fysiskt möte?

- 15. Kan du förklara på vilket sätt du har upplevt någon personlig kontakt med läkaren?

- 16. Känner du att läkaren visar någon empati i form av hans handlingar? isåfall hur?

- 17. Vad tycker du händer med icke verbala handlingar(ögonkontakt,rörelser,gester etc) i det virtuella mötet? exempelvis känna av energin i rummet och att vara på plats fysiskt

Upplevelse av skillnader i interaktion mellan läkare och patient i virtuella världen

- 18. Tycker du att mötet blir lika personligt och du känner dig lika nöjd?
-
- 19. Beskriv vilka viktiga faktorer som tyder på läkaren visar empati för dig och dina problem eller känns det som att du bara är en i mängden när du är ett digitalt möte?

- 20. Hur delaktig känner du dig angående beslut som skall tas om din vårdplan i ett digitalt möte? Vilka faktorer tycker du är viktigt?

- 21. Hur känner du dig angående att du fått en diagnos trots att läkaren inte har utfört någon fysisk undersökningen eller andra tester?

Appendix B2: Letter of consent

Background

Hello, my name is Milad Maparzadeh, and I am a master student in IT-Management. I am now conducting my master thesis within the informatics field with the research area of digitalization in healthcare, more specifically my study will be about social implications that can occur in digital healthcare meetings between the doctor and the patient with the focus on the patient's perspective.

Interviews

This research will gather data in the form of interviews either a physical or a digital interview will be conducted.

What you agree upon as a participant:

- To be an anonymous part of this research.
- Recording through sound if the interview is physical and both video and audio if is held digitally.

The interview will be anonymous, and the material will only be used for this study and not shared to any third parties. The data collected from the interviews will be transcribed verbatim and each participant will be given a fictional alias which cannot be connected to the participant privately.

This information will be seen as a verbal consent which will take place before the interview and will be seen as an agreement between the researcher and the participant. I care to conduct a safe study for you as a participant and I wish that you want to participate in this research, and you can stop the interview at any time, and I won't use your material in the research.

Thank you for your time and participation and if you want to take part of the final paper, I will send it to you.