SAVONIA

THESIS – MASTER'S DEGREE
SOCIAL SERVICES, HEALTH AND SPORTS

PERSON-CENTRED APPROACH IN DEVELOPING DIGITAL HEALTH: A CASE STUDY OF A CLIENT ORGANIZATION

A thematic analysis

AUTHOR Pauliina Kämäräinen

SAVONIA UNIVERSITY OF APPLIED SCIENCES

THESIS
Abstract

Field of Study Social Services, Health and Sports	
Degree Programme Master's Degree Programme in Global Public Health	
Author Pauliina Kämäräinen	
Title of Thesis Person-centred approach in developing digital health: a case study of a client organization. A thematic analysis	
Date 19.5.2025	Pages/Appendices 46/4
Client Organisation /Partners	

A person-centered approach is valued at both international and national levels as an approach that can support individuals in taking responsibility for their own health. It promotes healthcare systems and professionals to ensure individualized care and practices to take place. Health care is also continuously increasing digitalization, for example in Finland it has been established as a foundation of the healthcare. One aspect and aim of digitalization is to provide means and solutions to empower people to maintain their own health and wellbeing and it requires a multi stakeholder approach. The purpose of this thesis is to explore the role of person-centred approach in the client organization's operations in digital health development. The aim is to study how person-centric approach is realized in the client organization. The objective is to study how person-centred approach is realized in a client organization, that is heavily involved in digital health services and development, and to also find whether there are any challenges that could be addressed in the future when developing digital health in the client organization's operations when developing digital health. This research takes a qualitative approach. Semi-structured group interviews were carried out in February-March 2025 with 13 volunteers. An inductive thematic analysis was conducted. Five themes were identified. The results show that person-centred approaches are realized in various ways. There is an understanding that person-centred approach encompasses more than just the patients and emphasizes the importance of supporting health care professionals in utilizing digital health in patient care. In person-centredness the patient is the central actor, and this was mostly recognized in the company's operations. Understanding digital health solutions' users' needs was also considered to be a central focus when developing person-centred digital health, while there were also challenges in implementing it. There was also emphasis on recognizing the need to implement digital health solutions that are accessible, easy to use and safe. Company's internal cultural factors also contributed to the supporting and hindering factors in realization of person-centred approach. In conclusion person-centred approach is realized in various aspects in the company's operations, but there are also challenges. Recommendations for future development encompass education to person-centred approach and developing person-centred culture as a whole to improve collaboration and co-operation within the company but also with the other stakeholders.

Keywords
Person-centred approach, Person-centredness, Digital health, Digital health development, Digital health solutions

CONTENTS

LIST OF FIGURES

1 INTRODUCTION

Digitalization is affecting many different areas of the communities across the globe, health care being one of the aspects. There is a mutual understanding within the health communities that digital health has potential to help people manage their health-related issues, whether it has to do with promoting well-being or dealing with health emergencies. Digital health also can help nations manage their health care systems and provide more efficient health care services to people. (WHO 2021.)

National actors in Finland have also recognized the role of digitalization in the health care. Digitalization has been established as foundation of the healthcare in the national strategy for digitalization. There are several acknowledged phenomena that have contributed to the need of the strategy, such as the population getting older and the burden of need of care with its financial consequences. The global situation with safety and security issues also have contributed to the strategy, as it is acknowledged that a need for a better information management is needed. This also applies to the impact of climate change and the causes of it, such as spreading of diseases. At the same time health care services are evolving and rely more on evidence-based and individual care. Health care is also moving towards preventive actions rather than reactive actions. This calls for actions to support people and communities in self-care via versatile means. (STM, 2023.)

Evaluation of digital health services in Finland was conducted in 2023, where digital services were mostly considered to be useful, both by patients and healthcare professionals as it enables flexible services and can streamline work processes. The challenges focused on difficulties in using digital health services, be it patients who are in a vulnerable position or professionals who need to learn new ways of working. Challenges for the healthcare system stemmed from the lack of integration in the system, which poses risks for the continuation of services, growing workloads. Regulatory challenges were also addressed as the legal base that regulates digital services is broad and complex that can cause ambiguity. (Pennanen et al 2023.)

Digitalization is a central part of the present health care field, globally, and will continue to increase and give more opportunities to people to monitor their own health and well-being (Sitra, 2024). The Finnish ministry of social affairs and health has also published a strategy for digitalisation and information management in healthcare and social welfare, which supports person-centred care. The main goal of the strategy is to make digitalization a bedrock of healthcare, reaching to all aspects of healthcare, regardless of current policies and future changes. The strategy addresses the person's agency in maintaining their own health and wellbeing by providing necessary means and information and digital services. One of the goals is to support people to take responsibility of their own health and wellbeing. (STM 2023.)

Digital health is developed in a complex environment that includes various stakeholders. This encompasses actors from policymakers to health care organizations and practitioners and including also technical ICT experts and digital health developers and the industry. (Landers, Vayena, Amann & Blasimme 2023; Petersen-Khmelnitski, Balk-Møller & Price n.d.) This is furthermore added by the need to consider person-centredness in digital health development (STM 2023). This poses the importance to acknowledge the roles of other stakeholders who provide supporting services and knowledge to the development to ensure person-centred digital health.

The purpose of this thesis is to explore the role of person-centred approach in the client organization’s operations in digital health development. The aim is to study how person-centric approach is realized in the client organization. The objective is to study how person-centred approach is realized in a client organization, which is heavily involved in digital health services and development, and to also find whether there are any challenges that could be addressed in the future when developing digital health in the client organization’s operations.

2 PERSON-CENTRED APPROACHES AND PERSPECTIVES

Person-centred approach is pointed out as an important factor both global and territorial and regional strategies and initiatives. WHO has published a global strategy on digital health. The vision of this strategy is to provide tools and accelerate development globally to improve health. The strategy sets a framework, and its aim is to encourage global collaborations as well as national development. The program addresses several dimensions that need to be acknowledged. Person-centred approach is stressed so much that it has its own strategic goal. The proposed actions stress the importance of putting people in the centre with regards to safe use of data and encourage the transformation from reactive-care models to active care models within the community. (WHO 2021.)

The other major initiative that aims to promote person-centred care, is the European health Data Space (EHDS) is an initiative of European Commission that was accepted by the EU parliament and council in the spring of 2024 and came into force in the spring of 2025. The purpose of EHDS is to answer current challenges in the field of healthcare, specifically in availability and sharing of digital health data. It creates a framework to share and manage personal health data information. It has three major objectives of which the first one focuses on primary use of data and entails such areas a person's right to control their own health data and facilitating the change of information between healthcare providers in the EU. An impact assessment of the EHDS initiative was conducted during the process of forming the initiative. The outcome of the assessment suggests that it will have benefits to patients, as they will have bigger control of their own data all the time. This supports the patient's autonomy and allows them to have care and treatment where they want in the EU. (EU 2022.)

Framework for person-centred health services (IPCHS) emphasizes the importance of acknowledging different stakeholders who play a role in enabling person-centredness to be adopted to services. The key stakeholders are a broader set of actors that go beyond health care organizations and acknowledge the role of development partners that need to be incorporated to promote integrated person-centred services. It also promotes the implementation of digital health to reorientate health care. (WHO 2016.) This requires active participatory co-operation between stakeholders, including those beyond health sector, to ensure common understanding and information sharing, to form policies and processes to ensure person-centredness (Leyns, De Maeseneer & Willems 2018).

2.1 Person-centredness

The existing literature acknowledges that there are many definitions of person-centredness. Still, a common understanding is still missing, even though the current health care environment and policies strongly promote person-centred approaches to be utilized in the practices. (Waters & Buchanan 2017, McCance, McCormack & Dewing 2011.) The lack of clarifications causes challenges in implementing person-centredness to practice. As person-centredness can have different meaning to different actors, it can cause challenges in implementing person-centredness to practice. There is a need to clarify it to effectively drive change to policymaking. (McArdle & Luiking 2022.) Besides the term person-centred, there are parallel terms that have the same basic core idea, which are used to address the same phenomenon. These terms include such as patient-centred, client-centred and human-centred. (Moo, Bywood, Clark & McMillan 2021.)

Several themes describe the key elements of person-centredness. Honouring the persons by understanding that they are the individuals that are the experts of themselves and allowing them the power to decide for themselves is one main theme. This also encompasses valuing and respecting the person and their choices as they are. These conclude in the idea that the person is placed in the centre. The second theme acknowledges the importance of relationships in person-centredness, whether it be relationships between family and other social environments or with health care service providers. Building and understanding relationships help health care to promote individualized approaches to support the person. Fostering participation and promoting engagement is also associated with person-centredness as is gives the person a sense of meaning and a chance to express themselves. This is also achieved by supporting the persons possibilities to be included in the social environment around and able them to participate in communities' daily life and operations. Person-centredness also encompasses the positive thought of people have different competencies and strengths that need to be discovered to be able to individually find suitable interventions to the person's needs. The feeling of compassionate love is also noted as one key element. This surfaces from the human need of respect and that the feeling of caring is important when providing health care. The last theme focuses on organizational factors that are associated with person-centredness. There are several central factors that are considered to promote person-centredness in the organization's operations. The organizations strong values and a comprehensive approach to its services and a positive atmosphere and empowering the personnel support person-centred approaches. Continuity and consistency in services is stressed as is also flexibility to adapt to different needs is also a key element. (Waters & Buchanan 2017.)

2.2 Person-centred practice and care

To promote person-centredness in health care environment, a framework for person-centred practice defines the key pillars of what it consists of. Person-centred practices support the delivery of person-centred practice is described as

> *an approach to practice established through the formation and fostering of healthful relationships between all care providers, service users and others significant to them in their lives. It is underpinned by values of respect for persons, individual right to self-determination, mutual respect and understanding. It is enabled by cultures of empowerment that foster continuous approaches to practice development. (McCormac et al, 2015.)*

The framework of person-centred practice comprises of four pillars. The pillars have a cross-cutting relationships, as the first one contributes to the latter. The first pilar constitutes or prerequisites, which includes different attributes of professionalism, such as competency in one's profession and being committed and also capability to demonstrate one's values and beliefs in work. The second pilar focuses on environment in which the care is being delivered. The focus is on environment that promotes shared decision-making policies and supportive leadership with engaging staff to effective relationships. Promoting innovation and risk taking is also nurtured. The third pilar focuses on processes, such as providing holistic care, patient engagement, providing holistic care, working with the patients' values and beliefs and promoting shared decision-making with patients. The central, and fourth pilar is the out-comes of forementioned pillars. The outcome creates an environment that

supports patients' satisfaction with care, feelings of being involved in care and feeling of wellbeing. (McCormic et al 2015.)

Person-centred care is narrower approach than patient-centred practice as it focuses on the patient and the caregiver and responding to the patient's different needs in a respectful way and focusing in responding to the patient's individual needs while also taking into account the patient's values and circumstances in supporting them. For the professional to be able to practice person-centred care, the working environment structures and processes need to support the practice. (Edgar, Wilson & Moroney 2020.) Berntsen et al (2021) explain person-centred care as an equal partnership of three actors, the patient, the professional and the system. All these roles are needed in the successful design and delivery and evaluation of care. The patient is the final decision-maker of their own body and their health, also by law. Health care professionals and the system must support, guide, and provide means to the patient in their choices regarding their own health. Berntsen et al (2021.)

Person-centredness is a value to patient empowerment. Patient empowerment can be seen as a process or a state. When it is a process, it provides tools and knowledge to the patient to make decisions that are informed and autonomous. In a process the patient can acquire knowledge that helps them to make decisions. The state of empowerment focuses more on patient's inner state of confidence and furthermore ability to participate actively to self-care. Empowerment leads to involvement and furthermore self-care and -management and also engagement and participation. (Hickmann, Richter & Schlieter 2022.)

By implementing person-centred practices to practice, the organizations can improve how to deliver different healthcare services and processes. It can also enhance the practices of how participatory working culture is implemented, these include for example leadership improvement and better teamwork. Regarding patient experiences, implementing person-centred practices they felt the encounter more dignified and more involved. The personnel felt more connected and committed to work. (Klopper et al. 2017.)

2.3 Person-centred culture

Person-centred culture enables person-centred care and practice to be implemented. Organization's culture defines how it operates and what are its values and missions and how they are operationalized. For a culture to be person-centred, there needs to be a common understanding and shared vision to place person-centredness to its core as a guiding value. In order to develop practices and processes, a person-centred culture must be adopted first. (Edgar et al 2020.) Emphasizing integrated care and the importance of acknowledging all the stakeholders that collaborate together in the ecosystem also support the shift towards person-centred healthcare (Aguirre-Duarte 2022). Implementing person-centred practices to an organization culture is a cross-cutting process that needs to be acknowledged from the individual level to the competencies of the organization to the overall policies and practices (Moo et al 2021). However, as to the author's knowledge, there is a knowledge gap in the literature of how person-centred culture should be implemented to stakeholder organizations that support the health care organization in service production.

Person-centred approach in healthcare has developed over time, but there still development elements that need to be addressed. There are five themes that are needed in developing person-

centred healthcare. There is a need for policy development in transforming systems from system-centred to person-centred. The growth of strategies in engaging the public to participate in policy formulation is also needed. Focus is pointed to integrated health care and the need for developing and implementing policies and strategies that enable a patient-centred customer journey. This calls for integrating different levels of healthcare to work in synergy with each other to support the patient in their individual patient journey. There is also a need to develop practical frameworks to support care professionals to implement person-centred care in practice. The final theme discusses the role of research on person-centred care. There are two major areas of study, the first one focuses on measuring outcomes of person-centric care for example by developing tools and instruments. The second area focuses on the transformation of the ways the studies are conducted. (Phelan et al 2020.)

Building a person-centred culture promotes the organizations' ability to work together towards a common goal as the common vision and strategies supporting that form a basis for (Titchen et all 2014). Building a shared vision of purpose to promote person-centredness helps the organization to overcome challenges that for example siloing can cause (Manley, O'Keefe, Jackson, Pearce & Smith 2014). Siloing means different subgroups of functions, resources of knowledge of interaction in the organization. Functional silos refer to organization's operative units, where resource-based silos focus on individual groups or people. Knowledge-based siloing happens when co-operation is limited to specific group of experts. Siloing can have both supporting and hindering effects on the organization's performance level. It can prevent the organization to exchange information effectively and can inhibit service production to perform effectively. Simultaneously silos can enhance the performance levels if the silos have been bridged together accordingly to support the organizations goals. (Bento, Tagliabue & Lorenzo 2020.) Siloing, when it does not have performance enhancing outcomes, can have an effect on client experience when the individual silos interacting with the client, do not discuss among themselves resulting in poor communication. (de Waal, Weaver, Day & van der Heijden 2019).

2.4 Education and competence of person-centred approach

It has been acknowledged that education is needed for person-centred approach. As there are several stakeholders that contribute to person-centred approach, the education also would encompass these actors, not just only health care professionals. (Santana et al 2018.) Existing literature focuses mostly on the education needs and competence requirements on health care professionals, educators, students and policy makers. Person-centred practice curriculum framework has been developed to prepare health care professionals, health care students and educators to work in a person-centred way and to answer the growing need of implementing person-centred practices to healthcare. The main elements aim to describe the strategy of the curricula and what is the shared vision for the curriculum and how it is structured. Systems take into consideration what methods and pedagogical approaches are used. It also addresses the style of how the curriculum is managed and implemented. Competences and resources of the teaching staff are also acknowledged as well as skills of the teachers and their needs for education. (McCormack et al 2022, Cook et al. 2022.) A Finnish study showed that healthcare professionals indicated that they had competences to provide person-centred care, but also that education is needed, especially to younger professionals regarding holistic care (Tiainen, Suominen & Koivula 2021). Despite the

understanding that person-centred approach is a multistakeholder entity (WHO 2016.), to the author's knowledge there is knowledge gap in the existing literature on person-centred approach competence requirements and applied educational interventions on other stakeholders outside health care actors.

3 DIGITAL HEALTH

There are several descriptions of digital health. According to WHO digital health is a wholesome approach that includes the knowledge and practice that aim to improve people's health. It is more than just digital applications and devices. Its aim is to support both individuals, professionals and systems to make informed decisions, based on data, to promote health and well-being. (WHO 2023; WHO 2021.)

The European Commission has also defined digital health in an overarching concept, which encompasses innovative services and technologies that aim to improve care processes and quality, as well as efficiency in the healthcare field (EU, n.d.). Digital health, as a whole, is a discipline, and it focuses on how different innovations can be used to improve health care. It encompasses how different technologies can be used to support health, prevent ill-health and help treat illness. Digital health can be described as an umbrella term that covers more specific systems that include for example such terms as ehealth, mhealth and others. (Walker MD, 2023.)

Digital health includes several different technological solutions. Here are a few examples of different digital health technologies. Ehealth consists of information and communication technologies that aim to support systems and practices in healthcare field. The field can span from health education to research and health care services. Telemedicine is also one branch in the digital health and ehealth tree. It is a health care service that is being provided using information and communication technologies to person's that are not physically in the same space as the professionals. Internet of things (IoT) is a system of network where different devices or objects are connected to the internet, and they transfer and communicate information to be further analysed and utilized. Big data also falls under the category of digital health. The amount of complex digital information is growing, and this big data information can be valuable for health care systems for knowledge-based leadership, and it needs new methods and tools to process the information. Artificial intelligence (AI) is a computer system that simulates human intelligence and can be utilized in health care from innovation to practical care processes. (WHO 2021.) There are also health care solutions and apps that are used via mobile use, these solutions are referred to as mHealth solutions. Robotics can be used in health care in different environments, from care processes to medication support. (Haverinen et al. 2019.)

Digital health interventions can be used to solve different health related problems. WHO defines digital health interventions as a way to solve a health care problem by using different functionalities or capabilities that digital health solutions can enable. (WHO 2023.) WHO's Digital Interventions, Services and Applications in Health (DISAH) categorizes how different digital technologies can be used to support the needs of people and health systems. Digital interventions are not only aimed at the person who is having health or well-being challenger or using health services. DISAH also acknowledges the role of the healthcare providers and professionals, healthcare systems in providing and operating services and patient care. (WHO 2023.)

For the person, who is defined as a member of the public and the user of services, there is variety of digital interventions that can support the person in achieving their health and well-being goals. These interventions span from communicating health counselling to the person, to personal health tracking systems, to managing their own health data and finances to communicating with

professionals. The role of the professionals and providers is acknowledged, as they operate with different digital technologies with the aim to support the patient manage their health and well-being. These digital interventions include solutions to operate and manage patient health records documenting care related information. These also include supportive solutions to support care planning and decision-making. Interventions for professionals' training is also considered. Third category focuses on interventions aimed for health care management to ensure the working environment has the necessary capabilities to provide services. The following category focuses on data management and what interventions can be done to ensure safe handling of the data, but how data can be used in knowledge-based management. (WHO 2023.)

Regarding digital health it is also important to recognise the role of digital health ecosystems that are networks that connect different actors operating together towards improved health care environment, both to patients but also professional. These actors include different institutions and stakeholders that are interconnected and interrelated. Digital health solutions are an integral part of the ecosystem as together with the actors they aim to create a holistic environment to promote accessible and efficient systems. (Aguirre-Duarte 2024.) These shared platforms enable co-creation and innovation to connect users and health care providers and aim to support providers in producing (Aguirre-Duarte 2024; Landers et al. 2023).

3.1 Drivers for digital health development

Digital health development has various drivers that guide the transformation of services towards digitalization. Withing the organization there is a need for a culture that embraces digitalization through shared decision making and transparency in the organizations governance and promotes digital health competence of the workforce. Beyond organizational level, broader environmental aspects, both regional and global, are to be considered as changes in different policies and regulations drive development needs. Changes in the environment arise also from the population whose digital awareness and readiness to use digital health changes. Attention needs to be focused also to digital ecosystem's changes as new systems enter the market to support healthcare. Another factor that drives transformation comes from research as knowledge from various perspectives regarding digital health increases. (Tangwaragorn et al. 2024.)

When developing digital health technologies, it is important to understand the users' needs and requirements as a whole. The wholesome understanding goes beyond individual technologies and describes a more holistic understanding of needs. A literature review by Chute, French, Raman & Bradley (2022) describes the whole-approach needs of patients and professionals regarding digital health solution. The findings suggest that the users value an agile exchange of information between actors to ensure sharing of data and getting a wholesome picture of the patient's current situation to plan individualized interventions together. The findings also suggest that patients value involvement and doing things on their own term. (Chute et al. 2022.)

A wholesome approach is also considered for electronic health record systems, where key elements for requirements stressed the importance of access to data, in a secure way. Fluid processes to exchange digital patient between authorized professionals was also considered to be important as it was seen important in delivering individualised and comprehensive care. (Assom, Karunaratne & Larsson 2025.) Other point of view focuses on building a standardized assessment method that

takes into considerations various needs, such as technical needs, clinical needs, usability needs and cost needs. Acknowledging these factors in the development of digital solutions can increase the perceived value and quality of the solutions and increase the impact factor in use. (Mathews et al. 2019.) If the methods and practices in digital health development are not well thought-out and responsible, the end-result of the digital health solutions might not realize as wanted (Landers et al. 2023).

Usability of digital health technology can increase the willingness to use them and can be seen as a critical factor of success when implementing solutions to use. Usability consists of multiple different aspects. Accessibility focuses on the technology's features that support the use of people with different needs and requirements. Aesthetics of the user interface should support agreeable use. The technology also should be suitable to the need and appropriately suit its purpose. This also applies to the effectiveness of the technology as it should be applied to targeted needs and be easy to use. The technology also should protect the user from making mistakes when using it. Usability also takes into consideration learnability. When a technology is easy to learn, it promotes efficiency. Technology should be memorable that the user does not have learn it again repeatedly after use. To satisfy the user, the technology should be pleasant and operable in use. (Maqbool & Herald 2024.)

Accessibility needs to be acknowledged in digital health development, as it can have an impact on ensuring equity in health care services and promote individualized care. A framework for equity in digital health describes key elements that would promote equity in digital health. The main elements to promote equity encompass building competence in digital literacy, building a digital infrastructure that enables use of digital health technologies and lastly ensuring accessibility to use digital health technologies. (Richardson, Lawrence, Schoenthaler & Mann 2022.) In European Union accessibility directive is a regulatory requirement that needs to be considered, as is covers different aspects to accessibility in different digital solutions and services. Besides promoting market opportunities, one of its aims is to ensure universal accessibility to different users who may have impairments or other limitations to promote equity. (European Union 2019.)

Regarding data protection and information security and accessibility there are regulatory requirements that need to be considered and that are key elements when developing digital solutions. As Digital health solutions process data, General Data Protection Regulation (GDPR) needs to be acknowledged and applied to protect people's privacy and personal data across European Union (European Union 2016).

3.2 Human-centred design in developing digital health

Human-centred design is used in creating innovative and user-centred solutions. It focuses on creating an environment that enables creators to solve problems and design products that meet the needs of the users. The framework stems from the basic principles that the user is placed at the centre and understanding the users' motivations and perspectives in designing products. It stresses that the collaboration needs to be multidisciplinary of various stakeholders to bring different expertise and perspectives together. The goal is to promote user satisfaction and increase the possibility of adaption and acceptance of the product. (Landry 2020.) Human-centred design method in e-health development aim to promote end-users' impact in designing products and services. There are different methods and each of them have their own, specific purpose to support

development, while also having similarities as they all aim to understand the needs of the user. In user-centred design the aim is to get the best possible understanding of end users' needs and wants to then transform this understanding, through usability testing to the product. User experience design deepens it even further by aiming to create products that are useful and meaningful to the user. Design thinking also focuses on understanding the needs to support innovative through co-creation. Participatory design aims to involve the users in the beginning stages of the development, in prototyping and ideation to. Co-creation aims to involve the users, together with designers to design the product or design. (Vial, Boudhraâ & Dumont 2022.) Human centred design has been used to design products that can have a direct impact on the health outcomes of the person, such as designing the concrete services and products used by the person. Human-centred design has also been used to promote indirect outcomes, where the human-centred design could improve health system's performance in a broader context. This also included solutions that are not used by the person's themselves but are used indirectly to promote health outcomes. (Bazzano, Martin, Hicks, Faughan & Murphy 2017.) For example, Human-centred design was used to design a web-based application to improve refugees' and migrants' access to healthcare services. A multidisciplinary approach, together with the future end-users, was applied to identify and empathise different cultural and environmental barriers and facilitator that would be needed to address in the development of the application to meet the needs of the users. (Bartlett et al. 2021.)

3.3 Supporting competence in digital health implementation

Promoting person-centred approach through digital health solutions demands education for the healthcare professionals. Education aims to increase knowledge of theoretical understanding of digital health and also practical perspectives supports healthcare professionals' openness to implement new ways of working and improves competencies to practice their profession. Education is also needed to increase professionals' abilities to face possible technical issues that digital health solutions might bring and that can cause frustration. This consists of proper education on how to use the systems and know how to handle technical difficulties. This knowledge is needed so that, instead of using resources to struggle with the system, the professional can focus on the patient. (Carlsson, Alm & Rising 2022.)

A manual for promoting digital health competencies in the Finnish health care contexts stresses the importance of educating health care professionals in digital health. According to the report that was done to support the manual, majority of health care professional had expressed the need for education regarding digital health. The needs for education stretched from patient record documentations to data security and information safety to data management to ethical competence. These education needs need to be fulfilled to adapt to the needs of a changing health care system's demands and also patient's needs. (Tepponen, Ahonen & Turja 2024.)

4 PURPOSE, OBJECTIVE AND RESEARCH QUESTIONS

The purpose of this thesis is to explore the role of person-centred approach in the client organization's operations in digital health development. The aim is to study how person-centric approach is realized in the client organization. The objective is to study how person-centred approach is realized in a client organization, which is heavily involved in digital health services and development, and to also find whether there are any challenges that could be addressed in the future when developing digital health in the client organization's operations.

The research questions are:

- How person-centred approach is currently realized in the client organization's operations?
- What should be developed in the client organization's operations to support person-centred approach?

5 RESEARCH METHODS AND IMPLEMENTATION

5.1 Research methods

The research method of the thesis is qualitative. In qualitative the researcher is aiming to understand different phenomena and to find meanings in those phenomena. It approaches phenomena through understanding the experiences and perspectives of people, rather than objectively executed measurements. The researcher aims to find themes that are connected and to create preliminary concepts. (Kyngäs et al 2019.)

Qualitative research does not aim to quantify the findings but rather explain what and why something is the way it is. It can be used to explore lesser-known phenomena and understand its essence before quantifying it, and also vice-versa to deepen the understanding of a quantified phenomenon. It is a valuable method to study peoples' views and beliefs that quantitative research cannot reach. Methods that are used in qualitative research are usually interviews, observations and analysing different documents that are then carefully analysed to find the meanings that it sought to answer. (Pope & Mays 2020.)

The research method was chosen for this research because implementation of person-centred approach to digital health development has not been studied in the company previously. A qualitative method suits the purpose as it gives an insight into how it is perceived in the company and increases the understanding of current experiences and views on the topic.

5.2 Timeline of the research

The thesis process begun in September 2024 when the subject of the thesis was chosen and approved by the client organization. The thesis plan was written in the fall of 2024 and was approved in November 2024. The research contract was signed in December 2024 by the author, the client organization and Savonia-AMK.

During January 2025, the author started to plan the interviews and surveyed the volunteers. By February 2025 volunteers were surveyed, and group interview sessions had been organized. The interviews took place within 5 weeks of February 2025 and March 2025. The data analysis started after the last interview had been conducted. The data analysis process lasted from March to April. The author then started to draft the report of the results and finalized the thesis in May 2025. The timeline of the research process is described below in Figure 1.

Figure 1. Timeline of the thesis

5.3 Ethical considerations and measures

For this thesis, there were several attachments that needed to be considered to promote research integrity. A contract with the client organization using Savonia AMK template was signed. The author discussed with the client organization whether a research permit is needed and found out that it was not needed, a contract was sufficient. The author also inquired if the client organization required a confidentiality agreement. Since the author works in the client organization and has agreed to a confidentiality as an employee, there was no not need to sign a supplementary agreement.

The data was collected through interviews, and this required that a research consent be asked from every participant. A research information sheet was prepared, where the author explained the purpose and the objective of the study, voluntariness to participate, right to cancel participation and data management and privacy. It also clarified the course of the research process and how the results are published once the thesis is done. A consent document was also prepared using Savonia AMK template. As personal information was gathered in the interviews a privacy policy document was also prepared using Savonia AMK: s template as a basis.

The author herself works in the client organization and is familiar with the organization. The author also knows most of the volunteered interviewees, as a colleague. This was also discussed in the Research Information Sheet to clarify that participating in the research does not and will not affect future co-work with the volunteers.

5.4 Data collection method

The participant of the research were volunteers from the organization. There were no other specific competence requirements for the volunteers regarding the subject of the thesis than that the volunteers had some connection to digital health development. The volunteers came from different units in the organization and had diverse backgrounds and expertise within the ICT field. All of the volunteers had experience in digital health procurements, some more than others. Most of the volunteers had experience in participating in different projects where digital health had been deployed or otherwise developed. Majority of the volunteers had some connection to continuous

services from different perspectives. All volunteers had experience with working with the clients, again some more than others.

The organization has multiple units that have professionals from multiple backgrounds that could contribute to the research. A preliminary survey of possible of units that would be asked to join the research was done by the author and client organizations supervisor. The aim was to ask units that had experience in procurement processes, development projects, business and service productions. The author then contacted the superiors of those units via email and explained the purpose of the thesis and asked them to name a few professionals from their unit that author would later approach. The advantage of an interview as a data collection method is that the interviewees can be chosen based on their assumed knowledge on the research subject (Tuomi & Sarajärvi 2018.).

The author surveyed volunteers by contacting them via email and asked tentatively if they were interested in participating in the group interviews. Volunteers received a short introduction of the research that explained the purpose of the thesis and the themes of the interview question via email. It is ethically justified that the interviewees get information about the interview and its themes and questions beforehand, and it also supports a successful interview to take place (Tuomi & Sarajärvi 2018.).

The data was collected by group interviews that were conducted by the author of this thesis. The thematic interviews were conducted by using semi-structured interview form. The goal in a qualitative research interview is to get as much information as possible on the subject. In a thematic interview, the researcher leads the interview with pre-chosen questions that aim to get answers to the research question. The researcher can use follow-up questions to further deepen or clarify the answers. The content of the interviews is strongly related to the research subject. The role of the researcher is to give interviewees freedom to talk freely on the subject, but to also make sure the discussion stays on the topic. (Tuomi & Sarajärvi 2018)

The interview form was created before the interviews. There were six questions that formed the main frame of the interview. These questions aimed to get answers to the research questions. The questions were designed to be simple, with easy-to-understand language. As person-centred approach as a concept was not expected to be familiar to everyone, the questions were designed around the terms patients and person-centred processes to make them more reliable. Interview form is attached. (Annex 1)

In thematic interviews there is no common consensus on should the format of the questions be the same and be in the same order, the interviews can range from an open to a structured interview (Tuomi & Sarajärvi. 2018). The author aimed to follow to the interview form as must as possible and ask clarifying questions based on the answers the interviewees gave. It was also important to treat each interview as an independent occasion so that the previous interviews and answers did not affect the current occasion.

There were totally eight interview sessions, with total of thirteen volunteers. Interviews were conducted using Microsoft Teams. The participants from the same unit participated in the same interview. Each participant attended to only one group interview. Each interview started with a short Power Point presentation of the research that explained the framework and concepts of the study in a nutshell. The Power Point presentation was also sent to the volunteers beforehand so that they

could familiarize themselves with the topic and the context of the interview. As the volunteers came from different backgrounds, and not all had background in healthcare, it was important to introduce the framework of the research before the interview started. The Research Information Sheet and consent were also reviewed. Each interviewee was asked for oral consent to use the material in this research. The interviews were recorded using Microsoft Teams recorder. Microsoft Teams transcript feature was also used to facilitate transcription for the analysis. The complete interview material consisted of 115 pages or 33 817 words in Finnish in font 12 Segoe IU text.

After the data was collected, the first stage before entering analysis phase, was to listen to the interviews and correct any possible mistakes that the Microsoft Teams transcript feature had made. This was a crucial phase as there were a lot of mistakes. The author then anonymized the data by coding the volunteers. Each volunteer received a code (A to M). The author saved the decryption key to her personal notes so that the author could retrieve the volunteer if they decided to cancel their consent. The interview recordings and automatic transcript files were destroyed after the interviews.

5.5 Inductive thematic analysis of the data

An inductive thematic analysis was performed to analyse the interviews. In an inductive approach the data is used to create a theoretical framework. The data, when analysed, provides the categories, concepts and themes inductively, they are not predetermined beforehand. Previous research knowledge is applied when discussing the results. (Tuomi & Sarajärvi 2018.)

A thematic analysis is a research method that is used to identify, analyse the research data into significant themes. It is used to find patterns and themes in the data. In a sematic approach, the focus is explicitly on the data and what it means, it does not seek to find underlying factors or meaning in the data. A thematic analysis consists of six stages, as described in Figure 2. (Braun & Clark 2006.)

The first stage is to read the transcribed material several times. It is important that the researcher gets a holistic understanding of the material in order to proceed to the next phase. The second stage consists of initial coding of the data. Interesting features were identified and codified. A code is a segment found in the data, which relates to the research question and summarizes an idea or a thought. The codes are the basis for the themes as they are the first phase in to identifying similar, recurring or different themes. In the next stage the identification of possible themes begun. A theme has a relation to the data as it describes an essence, or a pattern found in the data that is related to the research question. The codes that are similar form a common sub-theme. The sub-themes can be further connected to actual themes. In the fourth stage the themes are assessed. It is important to refine the themes and to make sure that they support and reflect the data and are consistent. In the following stage the chosen themes are named to describe the theme in an explicit way to reflect the essence of the theme. The sixth stage consists of the report of the results. The results are to be presented in coherent, concise way, which proceeds logically, does not repeat itself and produces a comprehensive story of the subject. (Braun & Clark 2006.) The description of the results should descriptive and detailed. Quotations from the data help the reader to understand the chain of reasoning behind the analysis. (Puusa, Juuti & Aaltio 2020.)

Familiarizing with the data.

- The author read the transcibed data several times to get familiarised to it.
- Preliminary markings were made and footnotes were written to the material to highlight first impressions and possibly relevant expressions.

Initial coding of the data

- The the author searched the data to find answers to the research questions.
- These expressions were identified. They usually consisted of one sentence, sometimes two.
- The expression were reduced to codes that summarized the core idea of the expression

Identifying the themes

- In this research the codes were separated from the rest of the data to a separate word document.
- The author then printed the individual codes to paper and started to analyse them and arrange them to similar groups that formed the first sub-themes. The potential sub-themes and themes were re- arranged and assessed multiple times to find the final result. (Figure 3)
- The author found this method to be the most effective as it gave a good visual map of the material and was easy to arrange and rearrange the codes and later sub-themes to different patterns
- When assessing the sub-themes the author relized that they could be further analysed to form the actual themes.
- Five themes emerged from the analysis.

- This stage was done three separate times, because during this stage the author found that the initial themes did not answer the research questions.
- The author returned to the previous stage of initial coding and started the process again. After the third time, results were satisfactory to move to the secon stage.

Reviewing and defining the themes

- The author returned to the original data to read the data again several times.
- The purpose was to reflect if the emerged themes in the analysis support the original data and to refine the themes.

Naming the themes

- The author studied the sub-themes and themes and desinged names that depicted the essence of the theme

Reporting the results

- The results were reported according to the themes. The theme were described in explanatory manner and several quotations from the original data were used to clarify the themes and also to express the reasons behind the chain of reasoning.

Figure 2. Process of the analysis, adapted from: Braun & Clarke (2006)

Original expression		Reduced expression	Sub-theme	Theme
J	In "K's" services that have been tendered are very adaptable to well-being county's needs. There are requirements that the button must be this colour and there. Well, the next day the button is that colour and is there and everything is OK.	Systems have been tendered to adapt to different needs.	Different needs are taken into consideration when developing systems	The goal is to deploy digital health solutions that are easy to use, flexible, accessible and safe
J	Then we notice again that well-being counties have different needs, and they have patient groups that have different needs, and that the same kind of system is not suitable in the same way to every corner of Finland. With these services, we can do it differently, we can change the colours, we can modify it as necessary	Systems can be adapted to different needs of the well-being counties and patient groups.		
J	New needs emerge yearly, so we need to be a system that can adapt to these new needs and processes according to the need.	Systems need to adapt to processes according to the needs.		
M	Some customizations can be done, like care plans, to support patients selfcare.	Some customizations can be done		
B	If you think about this client/patient perspective, one always thinks that it should be as simple and easy to use as possible, realizing that there are many diverse end-users. that it cannot be too difficult.	Simple and easy to use solutions to the needs of diverse users.		
K	Processes are different so requirements are such that it can be adjusted. So, we must get rid of the procurements where a big system is procured where the process bends to the system and not the other way around.	Procured systems should adjust to different processes even more		
J	We use a lot of time to ensure how data protection, information security and availability of services works. We are really on top of this in ICT	Data protection and information security are taken into account well.	Data protection and information security knowledge is strong in the company	
K	The company's strength is data protection, how things should be done to ensure their safety. How to ensure that information does not leak to places it should not go to. These processes and instructions for us are clear, just hop on to the train and go from station to station."	The company's strength is data protection.		
M	Supporting workflow, so that the systems are easy to use, but also the data is protected when operating with critical data, GDPR, NIS2 and all other possible things are taken into account.	Data protection is taken into account.		
M	Then there are also usage rights, that security should not slow down usability, but still sage right control must be such, that only necessary people get access to the data and only to the data they need in their role.	Usage rights processes are taken into account from the perspective of information security.		
M	Procurement is emphasized, there are accessibility and usability and data protection requirements.	Data protection is taken into account in procurements.		
L	How intuitive the user interface is in that device.	Intuitive user interface is taken into account.	Feasibility is taken into account in development	
L	We wanted it to be simple, easy to use solution	Easy to use solution was wanted		

K	It should be like breathing, that it is done without noticing. In an ideal situation the health care professional does not notice if they are working remotely or on-site. The main aim is to focus on caring the patient and this is where usability is important	Ease of use of the system helps professionals to focus on the patient.		
M	Attention is paid that if there is user interface, that it is easy to use and intuitive and accessible.	Ease of use is taken into account.		
M	Supporting workflow, so that the systems are easy to use, but also the data is protected when operating with critical data, GDPR, NIS2 and all other possible things are taken into account.	Ease of use of the systems is taken into account.		
F	Of course, these involve usability assessments, which is luckily quite often included to procurements. Some have been performed, and I have been involved in procurement process where usability assessments have been performed.	Usability assessments are performed often in procurements.	Usability is taken into account and usability assessments are performed	
H	If usability assessments are included to evaluation of offers in procurement, the needs come straight from end users' real-life situations in operating environments. Through this we try to achieve the end result that best meets the needs of the end user	Use cases to usability assessments come from real operating environment processes.		
H	Some business units tried to organize usability assessments, if they were thought, or let us say explore the possibility if it brings added value to the outcome. It is no not an automatic on-off thing that they are done. It depends on the procurement.	Usability assessments are done on procurement specific basis.		
H	What is the need and on the other hand do we have resources, if we are really in a hurry and there are a few people in that procurement, in a poor situation it (usability assessment) can be left out, because it is not possible to do.	The implementation of usability assessments is affected by the resource situation		
L	Of course, usability matters if you are not very digi native, how you put your card in and get a reading of it.	Usability is taken into account in development.		
M	Procurement is emphasized, there are accessibility and usability and data protection requirements.	Usability requirements are taken into account in procurement		
D	I think one main thing is accessibility. When we take into consideration all accessibility factor, and also all directives related to it, because they bring many good notions, then I think it is person-centred development. Accessibility is a good basis for all	Taking accessibility into account is a good basis.	Accessibility is taken into account in development	
M	Attention is paid that if there is user interface, that it is easy to use and intuitive and accessible.	Accessibility is taken into account		
M	Procurement is emphasized, there are accessibility and usability and data protection requirements.	Accessibility is taken into account in procurements.		
L	Accessibility directive determines how different groups, for example visually impaired, physically impaired and such, should be considered in using devices. So, this directive sort of gives directions on how the patient, client need to be acknowledged, how the devices and their planning should work	Accessibility directive determines how different groups need to be considered.		

K	I thought of two upper-level requirements, it has to be easy to use and accessible.	Ease of use and accessibility are taken into account in requirements.		
J	Usability and accessibility are the next things that are emphasized when implementing services to the field,	Emphasis should be put to usability and accessibility.		

Figure 3. Example of thematic analysis

6 SUMMARY OF RESULTS AND OUTCOMES

Five themes were identified in the analysis. These main results are listed below, and they are explained further in the next chapters. Summary of themes and related sub-themes is found on Annex 4.

1. In person-centred approach various aspects need to be considered.
2. The patient is mostly identified as a central actor of operations by acknowledging them using different methods.
3. Understanding and clarifying various needs should guide development
4. The goal is to deploy digital health solutions that are easy to use, flexible, accessible and safe.
5. There are internal factors in the company's operation culture that both support and hinder the implementation of person-centred approach.

6.1 In person-centred approach various aspects need to be considered

The interviewees discussed that person-centred approach is more than just the patient. It is a wholesome approach that takes into consideration, besides the digital health systems that are being used, the services around the processes and leadership. It should concentrate on realizing how different systems support the patient's desired and goals in their life situations.

> "*Well, person-centredness is an ensemble with the systems, and the service provided*"

> *"There are different levels of leadership, not only operative, the care, the daily work, but also how the well-being counties are lead and there are different units and for example who decides about system procurements"*

> *"...or is it the client who wants the system, which might not be the main question, but how to ensure all the processes and affiliated groups work together to enable person-orientated planning and execution"*

The company has a significant role in supporting the health care professionals in the use of digital health systems. The role of the healthcare professionals was also largely stressed as they are an important part in providing care to the patient. It is important to identify the healthcare professional's role in digital health when deploying systems as they are key actors in providing quality care.

> *" To us, person-centredness means both the patient and our client, the end-user."*

> *"Well, when the target is health-care professional, we can support them a lot."*

6.2 The patient is mostly identified as a central actor of operations by acknowledging them using different methods

The patient is identified as a central actor and is an underlying thought, cross-cutting company's operations. The common understanding is that services are developed so that the patient ultimately benefits from them. Even if the solution is not directly designed for the patient to use, they are still considered in the background.

> *" Because we are here for the patient and health care services are for patients."*

“Yes, well the system has no meaning without the patient or client.”

” And we are sort of here to enable our client to serve the patient.”

This is realized by various actions in the company. Company’s different professionals participate in creating various descriptions where the patient is placed in the centre throughout the life cycle of the services from procurements to projects to continuous services. Different descriptions consist of process descriptions, service paths, use cases and operating models. Often these descriptions are made together with the clients and, when appropriate, with the patients and end-users. Data is collected for example through interviews and workshops.

“The patients service path is strongly present”

” In development and implementation in general, there is inclusion, so that there are nurses or doctors or residents present. And in some cases, if one is allowed to attend resident forums, it is always good.”

” For example, in procurements of remote care, they were really interesting and fruitful, and we really carefully described patient paths”

However, there were also contradictory notions that the interviewees pointed out. The show that there are also challenges when it comes to acknowledging the patient perspective. The main notions were that the patient perspective is taken into account too late and can be narrow and is dependent on the person. The patients are not also the company’s direct clients, but indirectly through well-being counties. This might lead to forgetting the patient perspective.

” I often run into a phenomenon that the development work has already progressed significantly before thinking how it ultimately should serve the end-user, client, patient, or rehabilitator.”

” If one does not have health care background and understanding of the relevance of the patient in health care, then it might slip into ignoring the patient.”

“To us, the patient is not practically visible. The needs come from our clients, health care professionals, root users and tell us that this works like this and to make it better, it should work like this.”

6.3 Understanding and clarifying various needs should guide the development

Understanding needs guides development in all levels, from procurements to continuous services. The importance and ability of listening different needs was highlighted. Effort is put to co-operation, mainly with the healthcare professionals, to clarify the needs

“It starts with acknowledging the need and where it stems from and what it is.”

“We need to have years, capable ears and really listen to our clients. That is where the needs come, not necessarily detailed needs, but overall needs, in the form of use-cases.”

Regarding patient involvement, there were some contradictory mentions. Patients were sometimes involved in development processes; it was also noted that there could be more involvement.

“As long as it is well planned beforehand, the patients could be involved in joint discussions about what are the aims of the system. “

The needs arise from different sources. The clients are a major source of information. The company’s different professionals discuss and determine the needs together with the clients.

” The clients bring information to our substantive professionals, and they have already tentatively assessed the subject on what the patient perspective is.”

” Of course, it requires that the clients participate in addressing the current state and how it could work smarter.”

Feed-back from users is seen as an important and a valued source as it also guides development.

” We just talked that a lot of development suggestions have come from the field. And feed-back, they have made very good notions. And to us, if you get feed-back, it is very easy, if you get feed-back, you can react.”

There are other sources that provide impulses of needs. Company’s professionals need to understand the operating environment and its demands and future changes, from legislative changes to other obligatory demands.

“Of course, with, for example, patient record systems, you need to make sure that security bans and all the regulations regarding information of under-aged people are implemented and how different patient information need to be logged and used.”

“We actively follow changes in the law in our roadmaps.”

However, the interviewees indicated that there are also some challenges in understanding the client’s needs. Problems might arise when the discussions begin too late in the development process. Other main factor in challenges is co-operation with the clients. In some cases, there is too much distance to the clients, and this causes challenges to understand the needs of the clients. This can result in that the practical processes and results do not meet the real needs.

I think the problem is, from our teams’ perspective, just like my colleague here said, that we get to join the discussions of the clients’ needs too late.

” What should be done? Well, first of all we need to know our clients and have a real connection, so that we know what is really happening and what they need and what is coming. So, this knowledge, communications and cooperation is very important.”

6.4 The goal is to deploy digital health solutions that are easy to use, flexible, accessible and safe

Several different aspects were identified when discussing digital health solutions, such as flexibility in development, ease of use, accessibility, usability and data protection and information security. As clients and patient have variable needs, the solutions need to be adjustable and flexible to different needs.

” Then we notice again that well-being counties have different needs, and they have patient groups that have different needs, and that the same kind of system is not

suitable in the same way to every corner of Finland. With these services, we can do it differently, we can change the colours, we can modify it, as necessary."

Usability is taken into account by executing usability assessments. Usability assessments are done, when appropriate, in procurements. Use-cases for usability assessments arise from real-life processes. Usability requirements are also written to procurements.

"If usability assessments are included to evaluation of offers in procurement, the needs come straight from end users' real-life situations in operating environments. Through this we try to achieve the end result that best meets the needs of the end user."

Alongside usability comes ease of use, which is taken into account when developing digital health systems for example in procurements.

"It should be like breathing, that it is done without noticing. In an ideal situation the health care professional does not notice if they are working remotely or on-site. The main aim is to focus on caring the patient and this is where usability is important."

Accessibility requirements derive from accessibility directive, and is an important factor to notice when procuring, deploying and developing digital health solutions.

" I think one main thing is accessibility. When we take into consideration all accessibility factor, and all directives related to it, because they bring many good notions, then I think it is person-centred development. Accessibility is a good basis for all."

" Accessibility directive determines how different groups, for example visually impaired, physically impaired and such, should be considered in using devices. So, this directive sort of gives directions on how the patient, client need to be acknowledged, how the devices and their planning should work."

The Company has an extensive expertise in data protection and information security and much effort is put to ensuring the safety of data and information.

"The company's strength is data protection, how things should be done to ensure their safety. How to ensure that information does not leak to places it should not go to. These processes and instructions for us are clear, just hop on to the train and go from station to station."

" We use a lot of time to ensure how data protection, information security and availability of services works."

6.5 There are internal factors in the company's operation culture that both support and hinder the implementation of person-centred approach

The company has some internal factors that need to be taken into consideration when discussing successful implementation of person-centred approach. The interviewees pointed out both supporting and hindering factors. The company has a future-oriented view, and it desires to be

innovative and proactive when developing digital health. It was noted that person-centredness is visible at a strategic level and in the values of the company.

> *“We are one part of this nation to ensure this whole thing works, and I think it shows on a strategic level also. And also, on mission and vision. “*

> *” We listen to our clients’ needs and innovate new solutions and how current solutions can be utilized, with a future orientated view.”*

However, challenges regarding person-centred approach had to do with the questions on who is mainly responsible in implementing, since well-being counties are responsible for providing services and. This also raised questions that is person-centred approach familiar to all, one main factor being that the patients are not the company’s direct clients, but the well-being counties.

> *“Well-being counties have a greater responsibility in taking responsibility in person-centred approach than an ICT-company”*

> *“The patients are not company’s direct clients”*

The interviewees discussed that the company has been divided into silos, and it poses a challenge to development and cooperation.

> *” Our different business units do, or say they are doing so-called digital development in their own silos. But it is a rare occasion when developing digital services could be done only in one business unit.”*

> *” Yes, and is there the wall of the silo in front of you, that you cannot talk, they are so thick, that you cannot shout through it.”*

Operating instructions, operating processes and tools do not address person-centred approach clearly. Instructions, processes and tools are lacking or are otherwise superficial

> *“I was thinking that I do not recognize that kind of instructions.”*

> *” We are missing the tools, methods and processes to get close to our clients and their right people.”*

> *” I am sure there are superficial instructions. But I guess it mostly relies on the knowledge of the experts.”*

On the other hand, instructions, processes and tools should be developed to address person-centred approach more clearly, and some development actions have been done, for example to develop tools to identify clients’ needs. But on the other hand, there were notions of possible difficulty of creating general instructions of person-centred approach and focusing on sharpening the company’s strategy and values

> *” I would think it is important, that our internal processes and instructions should support more taking into account the patient perspective.”*

> *” But I do not know how, our services are very broad, so how could there be a general instruction, other than in our values.”*

” I think the need is more in our goals and these top-level values, goals and strategy. I think it should come more from those.”

The company possesses extensive healthcare expertise, with knowledge and understanding of the needs and operational environment of the healthcare sector.

"I think it is a real benefit that we have a lot of experts how have substantive knowledge, understanding and skills and have seen the reality of the operating environment.”

” Without substantive experts we could not, well we could, but it would be guessing if we had to spec certain systems…The real stars are those who understand the system and what kind of buttons are needed, that is where the important knowledge is.”

However, there are also challenges in applying the healthcare substantive knowledge, where in some cases it is not used at all and in some cases should be used more. Besides health care substantive knowledge, the company has other expertise also and this should also be utilized, together with health care expertise.

” We sometimes get lost in ICT-world and forget that if you knocked on somebody’s shoulder who knows the operating environment and understands things that ICT-orientated person cannot even recognize, we would get even better, efficient and client-centred solutions.”

” If we could use that internal knowledge and combine it with the client’s knowledge, we could get even more cost-effective solutions and development.”

7 DISCUSSION

The purpose of this thesis was to explore the role of person-centred approach in the client organization's operations in digital health development. The aim was to study how person-centred approach is realized in a client organization. The objective was to study how person-centred approach was realized in the company's operations, which is heavily involved in digital health services and development, and to also find whether there are any challenges that could be addressed in the future when developing digital health in the client organization's operations. The thematic analysis resulted in five themes that highlight the interviewees thoughts of person-centred approach, how it is perceived in general and what are the characteristics of how it is realised in the company's operations.

7.1 In person-centred approach various aspects need to be considered

The first theme focuses on the overall thoughts of person-centred approach and the understanding that there are several factors that need to be considered when applying it in development. The findings show that person-centred approach is considered as a comprehensive approach, which has many different dimensions that need to be considered when developing digital health. These dimensions include for example leadership, the surrounding processes and a wholesome understanding of the patient's life and situations. This finding is in line with previous literature where person-centred care and practice are complex and multidimensional frameworks and include many different aspects the main aspects of the framework are consistent with the findings, such as fostering relationships, understanding the importance of the environment and its structures and processing in fostering professional to support the patient (McCormic et al. 2015).

Other major dimension regarding theme 1 was the understanding the role of health care professionals in providing person-centred care and the importance to support them in utilizing digital health by training and supporting them in use. This finding is supported by the existing framework of person-centred care acknowledged the role of the healthcare professionals as a central figure delivering care (McCormic et al. 2015). There was also an understanding in this thesis' findings, that by supporting the healthcare professionals in digital health use and stressing the importance of ease-of use, the professionals can concentrate on providing care to the patient. This finding supports the results in Nascimento et al. (2023) study, where healthcare professionals found it important to collaborate with associated technology stakeholders in all stages of the system's life cycle to ensure implementation of useful and purposeful system that furthermore can enhance the healthcare professionals' performance, witch in return has an impact on the quality of the care. Schimmer, Orre, Öberg, Danielsson & Hörnsten (2023) studied what factors need to be taken into consideration when designing eHealth services. The findings show that eHealth services need to focus on supporting both the patient, but also the professional who is utilizing it in practicing care to the patient. Professionals' needs were prominent regarding continuous training and support as new services also new processes, so it is important that professionals are trained accordingly so they can better adapt to the new service. (Schimmer et al. 2023.) This was also evident in a study by Silsand, Severinsen & Berntsen (2021) about experiences of videoconferencing, where professionals expressed a great need for education and training and testing of a solution prior use, as the solution itself was seen as the biggest challenge to adopt. They also mentioned that the digital health solutions forced them to think of the processes of patient care differently and find new ways to work.

Using digital solutions also require that there be competent technical support available to help the professionals in technical issues. (Silsand et al. 2021.)

When discussing the results it is important to view the results against the research questions. The conclusion of this theme and its findings suggest that in the company's current situation there is a basic understanding of what person-centred approach entails. In practical measure this is realised in the operations by acknowledging that the patient will ultimately benefit from the development and design of digital health services and solutions, so they need to be placed in the centre. Another observation from which the current state can be assessed is the finding that recognizes the role of healthcare professionals in helping patients. This is concretely reflected in the company's operations as a desire to help and support the clients and healthcare professionals in the use and utilization of digital solutions. Overall, the findings support the current understanding that person-centred approach is a wholesome approach that aims to support the patient in their life. The results also reinforce the importance of acknowledging the role of healthcare professionals as a pivotal role in providing person-centred care.

7.2 The patient is mostly identified as a central actor of operations by acknowledging them using different methods

The second theme focused on the notion of placing the patient in the centre of services as it was seen as a pivotal factor in the company's operations. This was seen throughout company's operations, from strategical level as mentioned before, to production of services. The patient was seen as an actor who ultimately benefits from the digital health solution. This was visible in procurements, projects and continuous services. How ever there were also contradictory notions where the patient was not recognized as the central figure, due to the lack of knowledge of person-centred approach, misallocation of resources or that the focus is more on the procedures than the patient. The wholesome finding of placing the patient in the centre is congruent with the recognized essence of patient-centredness, patient-centre practice, care and culture, where the whole phenomenon focuses on placing the patient in the centre of action and purpose (Edgar et al 2020; Waters & Buchanan 2017; McCormic et al. 2015). Existing literature highlights the advantages of applying person-centred approach, where the patient is in the centre to development as it has proved positive outcomes on health and wellbeing, improved relationship among stakeholders, improved cost-efficiency and working environment (Meranius et al. 2020).

The practical execution of placing the patient in the centre could be seen in the use of different description methods. The interviewees brought up various tools that were used, including for example describing service paths or use cases or operating models where the patient acknowledged as the ultimate beneficiary. The information was gathered in workshops or interviews. As to the author's knowledge, there is no existing supporting or overturning literature of studies that use of the mentioned particular tools and methods in support of person-centred approach. However, literature suggests that different human centred design methods seem to be beneficial tools in designing digital health solutions, even though they have not been applied in health care that much yet. (Duffy et al 2025; Vial et al 2022; Bhattacharyya, Mossman, Gustafsson & Schneider 2019). Human centred design and other co-design methods can be used to identify users' position and needs, and this can be achieved for example by acquiring information through interviews or workshops and also

by describing use cases or examining the issue to be resolved through imaginary personas. These methods help the developers to understand the reality of the users. (Bhattacharyya et al. 2019.)

In summary, patient-centred approach is realized in the company's operation by placing the patient in the centre. This finding is also related to the first theme and to the of what person-centred approach is understood. The same thematic finding also gives an answer to possible challenges regarding person-centred approach, as there were also some opposite experiences where the patient is not placed in the centre. Also, in the the company's current situation person-centred approach development is realized in that different tools and methods are used and considered helpful in placing the patient in the centre. The participants did not discuss in detail whether there were some methodologies behind the use of the tools. Even though the author found no direct existing literature to argue this finding of the use of individual tools supporting placing the patient in the centre, some similar elements could be found in the human-centred design approach, where the mentioned tools can be used. As a conclusion, the findings support current knowledge that person-centred approach and the importance of placing the patient in the centre is pivotal in digital health development and that different development methodologies and tools that embrace person-centred approach should be utilized in practical implementation and operations.

7.3 Understanding and clarifying various needs should guide the development

The importance of understanding different needs of the users was discussed in the third theme. It was considered to be a corner stone in development as it guides and gives direction to the operations. Co-operation with clients and health care professionals was also stressed when clarifying needs for development. Development of digital health should be based on health care's needs, the needs and also expectations should be understood and addressed in development (Nascimento et al 2023). Clients and their health care professional were considered key actors when identifying needs and understanding different needs is the key to development. The needs come from different sources, and there needs to be a collaborative and active effort to clarify the needs. Previous research by Nascimento et al (2023) also indicates that involving professionals in development and implementation of digital solutions supports competence in using the system and also strengthens their independence in using the systems.

Multiprofessional approach was stressed as understanding the needs require expertise from different viewpoints. The company also has a lot of health-care experts and knowledge whose contribution, together with that of the clients, helps to understand the health care environment and patient perspective and how they affect different operations as discussed before. This finding is supported by the findings in a literature review by Sanz, Acha & García (2021), where the main finding was that by combining various expertise and knowledge of different stakeholders, with different tools such as interviews or workshop to clarify needs can promote person-centred approach in digital health development.

Besides the input from the clients and users, the needs are also clarified from understanding the operating environment of health care and changes in it, such as regulatory changes and research and innovations in the market supply, whether they be national or global aspects that affect digitalization. This is consistent with previous research where it is acknowledged that various

aspects of drivers need to be considered in digital health development, such as regulatory changes in the operating environment (Tangwaragorn et al. 2024).

However, challenges arose, especially when needs could not be clarified. One reason particularly focused on the lack of connection to the source, especially the clients. There were also mentions of poor communication and therefore lack of common understanding of needs caused that the expectations did not meet. In a Norwegian study following a deployment of an alarm system, one of the challenges that emerged was communication problems with the ICT-company that had developed the technology and health care professionals, which caused frustration and demotivation among professionals (Batt-Rawden, Evastina Bjørk & Waaler 2021). The previous literature also suggests that engagement and involvement of end users, especially in the beginning stages of development enhances outcomes be more usable and also promotes users' willingness to adopt the solutions. Challenges may arise if communication is lacking, due to lack of common language between users, healthcare and technology experts or that the common goal is not discussed clearly or the fact that there is a misalignment of expert resources. (Duffy et al 2025.) The findings also suggest that direct input from the patients was rare, even though there was also some willingness to involve the patients more, when suitable for the cause. This relates to the previous study by van Velthoven and Cordon (2019) where they found that patients are rarely involved in the development, even though it would promote person-cendredness.

This theme and its findings pose both supporting factors and challenges of adapting person-centred approach in the company's operations. Person-centred approach is realized in the processes where there is an aim to understand clients' and users' needs. They are clarified using different methods and the end-goal being to ensure that the solution truly meets the user's needs and guides development lines towards person-centredness. There also needs to be a multiprofessional approach in development clarifying the needs. However, the findings also suggest challenges that can hinder person-centred approach from being realized. The challenge emerges if communication between stakeholders is lacking that could potentially result in that the needs do not meet. Overall, the findings reinforce the importance of developing digital health solutions that meet the user's real needs. To achieve it, there needs to be open and clear collaboration and communication between different stakeholder to enable various perspectives to be taken into consideration.

7.4 The goal is to deploy digital health solutions that are easy to use, flexible, accessible and safe

The fourth theme focused on the practical side of digital health solutions that would support person-centred approach in development and deployment. The aim with digital health solutions is that they should be easy to use, flexible, accessible and safe**.** There is a lot of effort put to ensuring these factors, especially in data protection and information security. Besides regulatory requirements, usability and safety, among other factors, were found to be important factors in a study conducted by Johnsen et al (2024), where they studied patients' perceptions on needs and prefaces regarding telemedicine solution. Usability was one factor that needs to be considered in development and understand individuals' experiences using the systems and how it affects them. Another factor that the patients were worried about was confidentiality of their personal information using digital system. Henni, Maurud, Fuglerud & Moen (2022) conducted a scoping review of the needs of patient that have impairments and how they should be translated to the design and implementation of the solution. The results showed that ease of use and accessibility were highly stressed in digital health

development and use. The patients' needs are varied, depending on their individual impairments. The solutions must be accessible and designed to be flexible to different needs as it would promote equality of these patients in the community. (Henni et al. 2022.) The ease-of-use was also considered a key factor when studying the views of digital health stakeholders (Lyles et al. 2021). Besides digital health technology perspective, the findings could be observed through person-centred approaches' frameworks and study if flexibility, accessibility and safety appear as elements within them. The existing literature of person-centredness stress the importance on individualised care and flexibility in designing interventions and respecting the person's self-determination (Waters & Buchanan 2017).

The findings suggest that the current situation in the company is in line with the elements of person-centred approach regarding digital health solutions as discussed in the previous chapter. Still, it is important to mention that the existing literature also discusses users' needs beyond single requirements and stresses the importance of wholesome approach that the users hope where digital health systems and ecosystems are a way to share, own and maintain health information with those people who have a right to access it (Chute et al. 2022, Assom et al.20215). In summary, the findings confirm the realization that a wide range of various perspectives need to be taken into consideration when developing person-centred digital health solutions.

7.5 There are internal factors in the company's operation culture that both support and hinder the implementation of person-centred approach

The fifth theme acknowledges the importance of the company's internal operational culture enabling person-centre approaches. The Findings suggest that the interviewees consider that the company's strategy and values take patient-centre approach into account. This was thought to be an important basis for the company as its purpose is to produce services that support the clients to produce their services to the patients. The company also aims to be future-orientated, innovative and proactive in digital health development that also aims to support the clients. Building a person-centred culture is the basis for implementing person-centred approach (Titchen, McCormack & Dewing 2014). Person-centred culture is built on shared vision that is common with all stakeholders and has same core values to build on. (Santana et al 2018; Titchen et all 2014). Different structures, policies, processes are built on that common understanding of health care providers and other integrated organizations or communities to support person-centred approach (Santana 2018). However, there were also contradictory findings. The interviewees discussed the focus of the company and the question if utilizing person-centred approach is indeed the company's role or is it more the client's role. Similar findings were done in previous research by Lyles et al (2021) where the findings suggest that digital health companies can have a misaligned focuses than health care providers. Digital health companies might stress external factors, such as regulatory factors and financial aspects, where healthcare providers desire to promote workflows and integrated data and usability to improve the effectiveness of the solutions. (Lyles et al 2021.)

Siloing in the company's operations was seen as a hindering factor to efficient development and to implement person-centeredness to the company's operations. It was perceived that siloing caused communication problems and the underutilization of expert resources in the company's operations and therefore affected service production to the clients. de Waal et al (2019) suggest that although siloing can be beneficial in some capacity as it can help the organization to create clear structures

for its operations and therefore manage operations more efficiently. Siloing can also cause problems if the silos operate in their own segment and the common goal is become blurred. The client experience can also suffer when the silos inwardly and do not pay enough attention to what the other silos might offer. Poor communication and lack of shared information also affects the client experience as it can cause misallocation and under-resourcing in projects and service production that is visible to the clients in the organization's performance. (de Waal et al. 2019.)

The findings indicated that the implementation of person-centeredness in the company's practical instructions was lacking. On the other hand, practical instructions and models would help experts better remember and understand person-centred approach in digital health development, while it was also considered difficult to produce practical and general instructions of a complex subject to a broad audience. As to the author's knowledge there is no previous supporting or overturning research on the topic of particular practical instructions. However, Edgar et al (2020) propose the importance of creating a culture before processes as it is a guiding principle and basis that promotes person-centred practises to be implemented, and this culture ultimately shapes the processes in the operational level.

The findings suggest that the company demonstrates elements of person-centred culture as there is a shared understanding of the importance of providing services that help the clients to provide their services to the patients. This was reflected – at least to some extent –in the company's values and strategies. This shared understanding is also seen in the practical factors as a willingness and aim to support the clients and their professionals to utilize digital health solutions by various means. However, while there are supporting factors, there are also challenges that might hinder the realisation of person-centred approach, such as siloing in the company. These challenged could be traced back to the realization of a person-centred culture in the company. While there are elements that support the operations, there seems to be a need to further deepen the implementation of the culture. As a conclusion, the findings highlight the importance that to fully embrace person-centred approaches, there needs to be a shared vision and a person-centred culture in the organization, that eventually enables practical operations to take place.

7.6 Future recommendations for the client organization to promote person-centred approach

The findings suggest that there are some challenges in the company's operations that hinder person-centred approach to be fully implemented. The recommendations for future actions are addressed below.

1. There are situations where the patient is not recognized as a central actor and person-centred approach not being realized. A future recommendation is to strengthen the staff understanding of person-centred approach.
2. Different methods are used to identify the patient as a central actor. However, the data did not clearly articulate what methodologies are used. Using human-centred design and other co-development method promote person-centred approach to be implemented. As a future recommendation for the company, it would be beneficial to clarify the methodologies used and further, if needed, support the implementation of human-centred design methods.
3. Development is guided by understanding users' needs. However, challenges may arise if communication with other important stakeholders is lacking and can result in that the solutions

does not meet the actual needs. To further support good communication that would ensure person-centred practices to occur, future recommendation for the company is to clarify what are the underlying factors that cause communication difficulties.

4. Important, practical requirements, when deploying digital health solutions are taken into account. However, to take the realization of person-centeredness further, more attention should be paid to a holistic and integrated approach. This wholesome perspective did not appear in this research's data as such, but as it would promote person-centredness it should be applied in the future in the company's operations when planning overall digital health development roadmap and architecture.
5. Person-centred culture enables person-centred practices to be implemented. Person-centredness could be clarified more clearly in the company's strategies and values and thought them convey to the company's daily operations to reduce the challenges caused by siloing. This also calls for a need to discuss with the clients in order to deepen the shared vision and understanding between the health care provider and an important supporting stakeholder.

7.7 Future research suggestions

As far as the author's understanding, there are not that many studies conducted that focus on supporting stakeholder's aspects in person-centred digital health development. The matter is even more complicated when discussing person-centred approach and the growing need to implement it also to digital health development. Majority of the existing literature focuses on healthcare environment, and little attention is paid to surrounding stakeholder's situations and possibilities. Future research should be aimed towards:

1. Studying is there a need to implement person-centred practices and cultures in a broader context to different supporting stakeholders, whether it be technology developers, IT-companies or others who contribute to the development of digital health and what does it mean.
2. Another suggestion for future research is the need for education. There are existing studies about the importance of educating healthcare professional about person-centred approach, but little is research about educating other professionals and experts, there is a need to understand does educating them support their competence in realizing person-centred approach in digital health development.

7.8 Limitations

There are three identified limitations to this research. First limitation of the research has to do with the chosen method of the research of using semi-structured interview forms. The only inclusion criteria were that the volunteers had experience in digital health development, but no prior understanding or knowledge was required of person-centred approach. This resulted in that the volunteers had a varying knowledge of the person-centred approaches concepts, so this might limit the validity of the research, as the semi-structured interview questions were quite open and broad and did not go deeply to the theory-base of the subject. The results might have been different if the interview form had been designed more structurally where the questions had been formed deductively by forming the question based on existing evidence Such an approach could have yielded more detailed results. On the other hand, the chosen method allowed for a more authentic

reflection of the current situation and its challenges, as the findings emerged from the participants' personal experiences and perceptions of the topic.

The research sample presents a potential limitation to the study as it is only a small representation of the company's different experts. Various resource-related factors affected the possibility to organize and perform the interviews, but if a greater number of volunteers had participated, there would possibly have been broader sample of the company's expertise and allowed greater data saturation. If the saturation point had been reached, the results could have been a more accurate representation of the company's current state regarding person-centred approach in digital health development.

Language translation also poses a possible limitation to the study, as some of the data had to be translated from Finnish to English in the report and this can pose a risk to translation errors that can cause misunderstandings in the report.

7.9 Trustworthiness

Evaluation of trustworthiness is an integral part of the research process. It is a good research practice that the researcher presents justifications to support trustworthiness. The researcher presents the evaluation in the report to convince the reader that the research meets ne trustworthiness values. The aim is for the reader to understand researcher's choices and follow coherently the process. In qualitative research it is also considered good practice to reflect on the researcher's objectivity to the research. (Puusa et al. 2020.) The trustworthiness of a qualitative research can be assessed from several different criteria. The main criteria that are used are credibility, transferability, dependability and confirmability. (Korstjensa & Moserb 2018.)

Credibility addresses the confidence level of the research. It is used to assess if the findings of the research are plausible in comparison to the original research data and that the interpretation is correct in relation to the data. Credibility can be further assessed by inspecting it from different aspects, such as prolonged engagement, triangulation, persistent observation and member check. (Korstjensa & Moserb 2018.) Persistent observation aims is to assess the credibility of the research by assessing if relevant elements were identified. This can be achieved for example by thoroughly immersing to the data and the process to find the relevant and appropriate tools to conduct the research and analysis. (Korstjensa & Moserb 2018.) In this thesis persistent observation is realised in thesis the author read the data several times in the first stage of getting familiar with the data and after thoroughly knowing the data. By understanding the material deeply, the author then was able to identify the relevant codes. The analysis process was repeated three times as after assessing the codes the author understood that coding did not meet the original data's content. After the third time of more immersion with the data, the correct codes were found that ultimately lead up to the final themes. To enhance credibility, the material from different stages of the process can be brought back to the members, from whom the data was collected, to get feed-back and to ensure right interpretations (Korstjensa & Moserb 2018). In this thesis feedback was not asked.

One factor that also needs to be assessed is the saturation of data. Saturation means the point where the data gathered from the participants begins to be repetitive. When the saturation point has been reached, there is no new information to be gained. The researcher should also mention codes that did not fit into the themes as this could be one indicative of unsaturated data. (Kyngäs et al.

2019.) In this thesis saturation point was not reached completely. Majority of the data started to repeat itself, but there were some codes that felt were left out or incomplete.

Transferability is another aspect of assessing trustworthiness. Transferability addresses if the research is transferable to other settings. This is done by documenting and describing the process and other relevant aspects as openly as possible. The aim is for the reader to get a comprehensive view of the research so they can assess the transferability. (Korstjensa & Moserb 2018.) In this thesis the author aimed to present the research process in an open, clear and coherent manner. The chains of reasoning are reported in the thesis, in section 5. Sample and sample size are also described in the section 5. Description of the volunteers is also described as well as inclusion criteria. Interview procedure is described, and the semi-structured interview form is attached to the thesis.

Dependability addresses the stability of the findings and consistency. The process should be logical, documented and traceable. This can be achieved by documenting audit trail where the researcher documents the process and all decisions they have made during the research. (Korstjensa & Moserb 2018.) In this thesis the author kept a notebook where the researcher wrote down and reflected on different observations that arose during the research process in order document them to the final thesis report. The process of the research is documented both in timeline and in descriptive text in this report.

Confirmability addresses the neutrality of the research. The setting of the research and the findings should be objective reflections that lean on the data and not be influenced by the researcher's own beliefs and preferences. In qualitative research it is important to include the researcher's reflections throughout the process and their own role and position. (Korstjensa & Moserb 2018.) As the author of this theses is familiar with the company and its operations, the author realised that these prior experiences should not interfere with the integrity of the research. The author kept a notebook where the researcher wrote down and reflected on different observations that arose during the research process in order to avoid these prior experiences to affect the research.

7.10 Ethical considerations

This thesis was conducted in accordance with the principles of research integrity, as outlined by the Finnish National Board on Research Integrity (Tutkimuseettinen neuvottelukunta). These principles include reliability, honesty, appreciation and responsibility. Various practices that aim to support integrity one of which is adherence to ethical standards. It is essential to ensure that all necessary permits and consents are obtained and approved before data collection begins. (Tutkimuseettinen neuvottelukunta 2023.)

The research contract was signed by all parties involved. All the volunteers had a right to accept or decline their participation at any point during the process. Participants were provided with research information and asked for their informed consent. They were also informed about confidentiality, their rights, and how the data collected from the interviews would be processed and eventually destroyed

To maintain objective and to conduct the research in a responsible way, the researcher needs to distance themselves from external influences and should aim for objectivity in every phase of the re-

search (Kyngäs et al. 2019). As previously mentioned, the company employs the author. Daily work consisted of addressing some areas of the topic of this thesis. The author aimed to recognize these situations to be able to distant herself from the thesis at these occasions, to minimize the possibility of them affecting the thesis process sub-consciously. The opposite, when the author aimed to distance herself from her work, was the interviews. It was important that the author's own beliefs and experiences would not cause prejudice and to remain supportive to open discussion that happened in the interviews. This was relevant also in the analysis stage of the data, where the author again realised the need to remain neutral for the data. The author acknowledges this need for neutrality be one of the reasons why the coding and initial theming was done three times. The results revealed some challenges that the company faces which may be sensitive when publishing the thesis. However, in support of ethical standards, truthfulness and objectivity in the thesis, these findings were reported as they were.

REFERENCES

Artificial intelligence has been used in the work as follows:

ChatGPT 2025. OpenAI. GPT-4o-mini model. Accessed for language check, May 2025. https://chat.openai.com.

Aguirre-Duarte, Nelson. 2024. Connecting the Dots: Digital Ecosystems and Interoperability's Essential Role in Achieving Integrated care and Person-Centred care. An influential analysis of applied research in practice. 10.13140/RG.2.2.24895.32166.

Assom, L., Karunaratne, T. & Larsson, A. 2025. Harmonizing patient-centric requirements for secure digital health services in heterogeneous settings. BMC Health Serv Res. 11;25(1):235. doi: 10.1186/s12913-024-11978-x.

Batt-Rawden KB.,, Evastina Bjørk, E. & Waaler, D. 2021. A qualitative study of user experiences from the implementation of new technology in healthcare services, Norway. The Innovation Journal: The Public Sector Innovation Journal, Volume 26(3), article 2. https://epe.bac-lac.gc.ca/100/201/300/innovation_journal/2021/www.innovation.cc/scholarly-style/2021_26_3_2_rawden_study-healthcare.pdf?nodisclaimer=1. retrieved 13.4.2025.

Bartlett, R., Boyle, J.A., Simons Smith, J. Khan, N., Robinson, T. & Ramaswamy, R. 2021. Evaluating human-centred design for public health: a case study on developing a healthcare app with refugee communities. Res Involv Engagem 7 (32). https://doi.org/10.1186/s40900-021-00273-2

Bazzano A.N., Martin J., Hicks, E., Faughan, M. & Murphy, L. 2017. Human-centred design in global health: A scoping review of applications and context. PLoS ONE 12(11). https://doi.org/10.1371/journal.pone.0186744

Bento, F., Tagliabue, M. & Lorenzo, F. 2020. Organizational Silos: A Scoping Review Informed by a Behavioral Perspective on Systems and Networks. Societies. 10(3):56. https://doi.org/10.3390/soc10030056

Berntsen G., Chetty M., Ako-Egbe L., Yaron S., Phan Thanh P., Castro I. & Curran C. 2022. Person-Centred Care Systems: From Theory to Practice. A White paper for ISQUA; 2022. Report No.: ISBN 978-0-9955479-2-6

Bhattacharyya, O., Mossman, K., Gustafsson, L., Schneider, EC. 2019. Using Human-Centered Design to Build a Digital Health Advisor for Patients With Complex Needs: Persona and Prototype Development. J Med Internet Res 21 (5) p. 1. https://doi.org/10.2196/10318

Borges do Nascimento, I. J., Abdulazeem, H., Vasanthan, L. T., Martinez, E. Z., Zucoloto, M. L., Østengaard, L., Azzopardi-Muscat, N., Zapata, T. & Novillo-Ortiz, D. (2023). Barriers and facilitators to utilizing digital health technologies by healthcare professionals. NPJ Digital Medicine, *6*(1), 1–28. https://doi.org/10.1038/s41746-023-00899-4

Braun V & Clarke V. 2006. Using thematic analysis in psychology. Qualitative Research in Psychology 3, 77–101.

Carlsson, M., Alm, A. K. & Rising, M. H. 2022. An evaluation of registered nurses' experiences of person-centered care and competence after participating in a course in digital competence in care. BMC nursing, 21(1), 368. https://doi.org/10.1186/s12912-022-01151-2

Chute, C., French, T., Raman, S. & Bradley, J. 2022. User requirements for comanaged digital health and care: Review. Journal of Medical Internet Research, 24(6). :e35337. https://doi.org/10.2196/35337

Cook, NF. Brown, D., O'Donnell D., McCance, T., Dickson, CAW., Tønnessen, S., Dunleavy, S., Lorber, M., Falkenberg, HK., Byrne, G. & McCormack, B. 2022. The Person-centred Curriculum

Framework: a universal curriculum framework for person-centred healthcare practitioner education. International practice development journal. Volume 12 (4), Special Issue. 1-11. https://doi.org/10.19043/12Suppl.004

Duffy, A., Boroumandzad, N. Lopez Sherman A., Christie, G., Riadi, I. & Moreno, S. 2025. Examining Challenges to Co-Design Digital Health Interventions With End Users: Systematic Review. J Med Internet Res 2025. 27. 1. https://doi.org/10.2196/50178

Edgar, D., Wilson, V. & Moroney, T. 2020-05-13. Which is it, person-centred culture, practice or care? It matters. International practice development journal. 10(1). 1-17. doi:10.19043/ipdj.101.008

EU.n.d Overview - European Commission. https://health.ec.europa.eu/ehealth-digital-health-and-care/digital-health-and-care_en Viitattu 18.10.2024

European Union. 2022. Proposal for a Regulation of the European Parliament and of the Council on the European Health Data Space. EUR-Lex.. EUR-Lex - 52022PC0197 - EN - EUR-Lex (europa.eu)

European Union. 2022. Commission staff working document. impact assessment report. accompanying the document. proposal for a regulation of the european parliament and of the council on the european health data space. swd_part 2_postrsc_swd_2022_131_1_en_impact_assessment_part2_v2 (europa.eu). retrieved 1.11.2024.

European Union. 2016. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016. EUR-Lex. Accessed April 28, 2025 Regulation - 2016/679 - EN - gdpr - EUR-Lex

European Union. 2019. Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services. EUR-Lex. Accessed April 28, 2025. Directive - 2019/882 - EN - EUR-Lex

Haverinen, J., Keränen, N., Falkenbach, P., Maijala, A., Kolehmainen, T. & Reponen, J. 2019. Digi-HTA: Health technology assessment framework for digital healthcare services. Finnish Journal of eHealth and Wellfere 11(4). 326–341. https://doi.org/10.23996/fjhw.82538

Henni, SH., Maurud, S., Fuglerud, KS. Moen, A. 2022. The experiences, needs and barriers of people with impairments related to usability and accessibility of digital health solutions, levels of involvement in the design process and strategies for participatory and universal design: a scoping review. BMC Public Health 22. 35 https://doi.org/10.1186/s12889-021-12393-1

Hickmann, E, Richter, P, Schlieter, H. 2022. All together now – patient engagement, patient empowerment, and associated terms in personal healthcare. BMC Health Serv Res 22, 1116. https://doi.org/10.1186/s12913-022-08501-5

Janhonen S & Mikkonen M(toim). 2001. Laadulliset tutkimusmenetelmät hoitotieteessä. 2. uud. p. WSOY. 2003.

Johnsen, HE. Øgård-Repål, A., Martinez SG., Fangen, K., Bårdas Aas, K. & Iveland Ersfjord EM. 2024. Patients' perseptions of use, needs, and preferences related to a telemedicine solution for HIV care in a Norvegian outpatient clinic: a qualitative study. BMC Health services research 24. 209. https://doi.org/10.1186/s12913-024-10659-z

Klopper, H., McCance, T., McCormack, B., Klopper, H., McCance, T., & McCormack, B. 2017. Person-centred practice in nursing and health care: Theory and practice (Second edition.). Wiley Blackwell.

Korstjensa, I. & Moserb, A. 2018. Series: Practical guidance to qualitative research. Part 4:Trustworhiness and publishing. European journal of general practice. 24(1). 120-124. https://doi.org/10.1080/13814788.2017.1375092

Kyngäs, H., Mikkonen, K., Kääriäinen, M., Kyngäs, H., Mikkonen, K. & Kääriäinen, M. 2020. The application of content analysis in nursing science research. Cham: Springer

Landers, C., Vayena, E., Amann, J. & Blasimme, A. 2023. Stuck in translation: Stakeholder perspectives on impediments to responsible digital health. Frontiers in Digital Health. 5:1069410. https://doi.org/10.3389/fdgth.2023.1069410

Landry, L. 2023. What is human-centered design? Harvard Business School Online. 15.12.2020, https://online.hbs.edu/blog/post/what-is-human-centered-design. retrieved 15.5.2025.

Leyns, C.C., De Maeseneer, J. & Willems, S. 2018. Using concept mapping to identify policy options and interventions towards people-centred health care services: a multi stakeholders perspective. Int J Equity Health 17. 177 https://doi.org/10.1186/s12939-018-0895-9

Lyles, C.R., Adler-Milstein, J., Thao C., Lisker, S., Nouri, S. & Sarkar, U. 2021. Alignment of Key Stakeholders'Priorities for Patient-Facing Tools in Digital Health: Mixed Methods Study . J Med Internet Res. 23(8):e24890. https://doi.org/10.2196/24890.

Manley, K., O'Keefe, H., Jackson, C., Pearce, J., & Smith, S. 2014. A shared purpose framework to deliver person-centred, safe and effective care: Organisational transformation using practice development methodology. International Practice Development Journal, 4(1). http://www.fons.org/library/journal.aspx

Mathews, S. C., McShea, M. J., Hanley, C. L., Ravitz, A., Labrique, A. B. & Cohen, A. B. 2019. Digital health: A path to validation. NPJ digital medicine, 2(1), 38. https://doi.org/10.1038/s41746-019-0111-3

Maqbool, B. & Herold, S. 2024. Potential effectiveness and efficiency issues in usability evaluation within digital health: A systematic literature review. Journal of Systems and Software. 208. 111881. https://doi.org/10.1016/j.jss.2023.111881.

McArdle, C. & Luiking, M. 2022-07-06. Commentary Implementing a pan-European Person-centred Curriculum Framework: The need for a strategic whole systems approach. International practice development journal, 12(Suppl), 1-3. doi:10.19043/ipdj.12Suppl.005

McCance, T., McCormack, B. & Dewing, J. 2011. An exploration of person-centredness in practice. Online Journal of Issues in Nursing, 16 (2), Manuscript 1. https://doi.org/10.3912/OJIN.Vol16No02Man01

McCormack B., Borg M., Cardiff S., Dewing J., Jacobs G., Janes N., Karlsson B., McCance T., Mekki T.E., Porock, D., van Lieshout F. & Wilson V. 2015. Person-centredness – the 'state' of the art. International practice development journal. 5, Special Issue on Person-centredness, Article 1. https://doi.org/10.19043/ipdj.5SP.003

McCormack, B., Magowan, R., O'Donnell, D., Phelan, A., Štiglic G. & van Lieshout F. 2022. Developing a Person-centred Curriculum Framework: a whole-systems methodology. International Practice Development Journal. 12. 1-11. doi:10.19043/ipdj.12suppl.002

Meranius, M.S., Holmström, I.K., Håkansson, J. Breitholtz, A., Moniri, F., Skogevall, S., Skoglund, K & Rasoal, D. 2020. Paradoxes of person-centred care: A discussion paper. Nursing Open. 7. 1321–1329. https://doi.org/10.1002/nop2.520

Moo, A., Bywood, P., Clark, B., & McMillan, J. 2021. Best Practices for Person-Centred Case Management: A Literature Review. Institute for Safety, Compensation and Recovery Research (ISCRR). Retrieved: https://research.iscrr.com.au/__data/assets/pdf_file/0010/2652715/298_Person_centred-case-management_FINAL.pdf. 1.2.2025

Paunonen M, Vehviläinen-Julkunen K. 1997. Hoitotieteen tutkimusmetodiikka. WSOY. 1997.

Pennanen, P., Jansson, M., Torkki, P., Harjumaa, M., Pajari, I., Laukka, E., Lakoma, S., Härkönen, H., Verho, A., Martikainen, S., Kouvonen, A., & Leskelä, R.-L. 2023. Digitalisaation vaikutukset sote-palveluissa. Valtioneuvoston kanslia.

Petersen-Khmelnitski, L. Balk-Møller, E. & Price C. n.d. Online publication. https://cifs.health/backgrounds/european-digital-health-in-brief-background-landscape-stakeholders/ Retrieved 15.5.2025.

Phelan, A., McCormack, B., Dewing, J., Brown, D., Cardiff, S., Cook, N. F., & Van Lieshout, F. 2020. Review of developments in person-centred healthcare. International Practice Development Journal, 10, article 3. https://doi.org/10.19043/ipdj.10Suppl2.003

Pope, C. & Mays, N. 2020. Qualitative research in health care (Fourth edition.). Wiley Blackwell.

Puusa, A., Juuti, P. & Aaltio, I. 2020. Laadullisen tutkimuksen näkökulmat ja menetelmät. Helsinki: Gaudeamus.

Richardson, S., Lawrence, K., Schoenthaler, A.M. & Mann, D. 2022. A framework for digital health equity. npj Digit. Med. 5, 119. https://doi.org/10.1038/s41746-022-00663-0

Santana, M.J., Manalili, K., Jolley, R.J., Zelinsky, S., Quan, H.& Lu, M.2017. How to practice person-centred care: A conceptual framework. Health Expect. 21(2), 429-440. doi: 10.1111/hex.12640. Epub 2017 Nov 19.

Sanz, M.F., Acha, B.V. & García, M.F. 2021. Co-Design for People-Centred Care Digital Solutions: A Literature Review. Int J Integr Care. 21(2),16. doi: 10.5334/ijic.5573.

Schimmer, R., Orre, C., Öberg, U., Danielsson, K. & Hörnsten, Å. 2019. Digital Person-Centred Self-management support for people with type 2 deabetes: Qualitative study exploring design challenges. JMIR Diabetes 4(3):e10702. https://doi.org/10.2196/10702

Silsand, L., Severinsen, G.H. & Berntsen, G. 2022. Preservation of person-centred care through videoconferencing for patient follow-up during the COVID-19 pandemic: Case study of a multidisciplinary care team. JMIR Form Res 5(3):e25220. https://doi.org/10.2196/25220

Sitra. 2024. Megatrendi-kortit. https://www.sitra.fi/julkaisut/megatrendikortit/. retrieved 15.9.2024.

Sosiaali- ja terveysministeriö. 2023. Digitaalisuus sosiaali- ja terveydenhuollon kivijalaksi Sosiaali- ja terveydenhuollon digitalisaation ja tiedonhallinnan strategia 2023–2035. Sosiaali- ja terveysministeriön julkaisuja 2023:32. Retrieved: http://urn.fi/URN:ISBN:978-952-00-9889-6 12.9.2024.

Tangwaragorn, P., Charoenruk, N., Viriyasitavat, W., Tangmanee, C., Kanawattanachai, P., Hoonsopon, D., Pungpapog, V. Pattanapanyasat, P., Boonpatcharano, S. & Rhuwadhana, P. 2024. Analyzing key drivers of digital transformation: A review and framework. Journal of industrial information integration 42, 100680. https://doi.org/10.1016/j.jii.2024.100680

Tepponen, M., Ahonen, O. & Turja, T. 2024. Käsikirja: Digitalisaatiota ja sitä koskevien toimintatapojen, osaamisen ja kulttuurin edistäminen. Sosiaali- ja terveysministeriön julkaisuja 2024:37. Sosiaali- ja terveysministeriö Helsinki 2024.

Tiainen, M., Suominen, T. & Koivula, M. 2021. Nursing professionals' experiences of person-centred practices in hospital settings. Scandinavian journal of caring sciences, 35(4), 1104-1113. https://doi.org/10.1111/scs.12925

Titchen, A., McCormack, B & Dewing, J. M. 2014. Developing a Shared Vision for Person-Centred Care. United Kingdom: John Wiley & Sons, Incorporated.

Tuomi, J. & Sarajärvi, A. 2018. Laadullinen tutkimus ja sisällönanalyysi. Uudistettu laitos. Helsinki: Kustannusosakeyhtiö Tammi.

Tutkimuseettinen neuvottelukunta. 2023. Hyvä tieteellinen käytäntö ja sen loukkausepäilyjen käsitteleminen Suomessa. Tutkimuseettisen neuvottelukunnan HTK-ohje 2023. Tutkimuseettisen neuvottelukunnan julkaisuja 2/2023. 1. painos. Helsinki.

van Velthoven M.H. & Cordon C. 2019. Sustainable Adoption of Digital Health Innovations: Perspectives From a Stakeholder Workshop. J Med Internet Res 21(3):e11922. https://doi.org/10.2196/11922

Vial, S., Boudhraâ, S. & Dumont, M. 2022. Human-centred design approaches in digital mental health intervention: Exploratory mapping review. JMIR Ment Health. 9(6), e35591-e35591. 10.2196/35591

de Waal, A., Weaver, M., Day, T. & van der Heijden, B. 2019. Silo-Busting: Overcoming the Greatest Threat to Organizational Performance. Sustainability 11(23):6860. https://doi.org/10.3390/su11236860

Walker, M.D. 2023. Digital Health: How modern technology is changing medicine and healthcare. Sicklebrook publishing: Sheffield, UK, 2023. ISBN: 9781446755969

Waters, R.A.& Buchanan, A. 2017. An exploration of person-centred concepts in human services: A thematic analysis of the literature. Health Policy. 121(10), 1031-1039. https://doi.org/10.1016/j.healthpol.2017.09.003.

World Health Organization. 2016. Framework on integrated, people-centred health services. Report by the Secretariat (A69/39). Retrieved: https://apps.who.int/gb/ebwha/pdf_files/wha69/a69_39-en.pdf. 4.4.2025.

World Health Organization. 2021. Global strategy on digital health 2020-2025. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.

World Health Organization. 2023. Classification of digital interventions, services and applications in health: a shared language to describe the uses of digital technology for health, second edition. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.

ANNEX 1: Interview form

- Could you briefly discuss what is your current role in the company?

- How are you involved in digital health development, for example what kind of solutions do you work?

- What is your view on how persons (a patient, client and /or end user), are considered at the moment in digital health development? For example in procurements, projects, continous services?

- In what context does this happen, and how have they been processed and what were the outcomes? Could you give me practical examples?

- How do the company's current operating models, processes and or instructions support person-centred approach in developing digital health solutions and services?

- Do you recognize any challenges, that would prevent the implmentation of person-centred approach?

- Is there something that should be done in the company's operations to promote the implementation of person-centred approach?

  -

- Would you like to add something more?

ANNEX 2: Research information sheet and research consent

TIEDOTE Person-centred approach in digital health development YAMK-OPINNÄYTETYÖSTÄ JA PYYNTÖ OSALLISTUA YLEMMÄN AMMATTIKORKEAKOULUN OPINNÄYTETYÖHÖN LIITTYVÄÄN TUTKIMUKSEEN
päivämäärä

Sinua pyydetään mukaan opinnäytetyöhön [Person-centred approach in digital health development.], jossa tutkitaan, miten [redacted] on huomioitu terveydenhuollon digitaalisten ratkaisujen palvelujen elinkaaren eri vaiheissa ihmiskeskeinen lähestymistapa (käytän tässä opinnäytetyössä person-centric approach -käsitteestä suomennosta ihmiskeskeinen) ja millaisia edistäviä ja estäviä tekijöitä ko. lähestymistavan toteuttamiseen tunnistetaan [redacted] toiminnassa. Tavoitteena on, että opinnäytetyön tuloksena syntyy ns. viitekehys henkilökeskeisen lähestymistavan huomioimisesta erilaisten digiratkaisujen palvelujen eri elinkaarten vaiheissa, jotta voimme entistä paremmin tukea asiakkaitamme vaikuttavien terveydenhuollon palvelujen järjestämisessä ja tuottamisessa.

Sinua pyydetään opinnäytetyöhön liittyvään tutkimukseen, koska esihenkilösi ehdotti sinua tähän, perustuen työnkuvaasi ja kokemukseen digitaalisten ratkaisujen kanssa työskentelystä.

Tämä tiedote kuvaa opinnäytetyön tutkimusta ja siihen osallistumista.

Opinnäytetyön tutkimukseen osallistuu arviolta noin 10 henkilöä [redacted] eri yksiköistä.

Tämä on yksittäinen tutkimus. Sinuun voidaan kuitenkin ottaa yhteyttä jatkotutkimusta tai tietojen tarkistamista varten, mikäli annat yhteydenottoon suostumuksesi.

Vapaaehtoisuus

Tähän opinnäytetyön tutkimukseen osallistuminen on vapaaehtoista. Voit kieltäytyä osallistumasta tutkimukseen, keskeyttää osallistumisen tai peruuttaa jo antamasi suostumuksen syytä ilmoittamatta milloin tahansa tutkimuksen aikana. Tästä ei aiheudu sinulle kielteisiä seurauksia.

Opinnäytetyön tekijä ja haastattelun toteuttaja työskentelee myös [redacted]. Suostuminen tai kieltäytyminen tutkimukseen osallistumiseen ei aseta sinua eriarvoiseen asemaan tällä hetkellä tai tulevaisuudessa yhteisissä työtehtävässä.

Peruuttaessasi suostumuksesi henkilötietojesi käsittelyyn, sinusta siihen mennessä kerättyjä henkilötietoja, näytteitä ja muita tietoja ei voida käsitellä osana tutkimusta, vaan ne hävitetään, mikäli niiden poistaminen aineistosta on mahdollista.

Opinnäytetyön tutkimuksen kulku

Aineiston keruu tapahtuu ryhmähaastatteluina teamsin välityksellä- Kukin haastateltava osallistuu yhteen ryhmähaastattelutilaisuuteen. Haastattelu kestää noin 1h 15min, josta ensimmäiset 15 minuuttia varattu yleisiin asioihin, kuten tutkimustiedottaminen ja suostumusten kerääminen.

Haastattelut toteutetaan avoimena haastatteluna keskustellen. Opinnäytetyön tekijä esittää kysymyksiä liittyen tutkittavaan teemaan, eli miten ihmiskeskeinen lähestymistapa tällä hetkellä näyttäytyy terveydenhuollon digitaalisten ratkaisujen kehittämisessä ja ylläpidossa ja millaisia toimenpiteitä tulisi tehdä tulevaisuudessa asian kehittämiseksi.

Haastattelut nauhoitetaan ja transkriptoidaan hyödyntäen Teamsin toiminnallisuuksia. Nauhoite tuhotaan opinnäytetyön valmistumisen jälkeen, viimeistään kesäkuussa 2025.

Opinnäytetyön tutkimuksesta mahdollisesti aiheutuvat hyödyt

Tutkimukseen osallistumisesta ei aiheudu tutkittavalle henkilökohtaista hyötyä.

Tutkimuksesta voi olla jatkossa sinulle hyötyä työsi näkökulmasta, koska opinnäytetyön tuloksena on tarkoitus kehittää prosesseja ja työkaluja.

Opinnäytetyön tutkimuksesta mahdollisesti aiheutuvat riskit, haitat ja epämukavuudet sekä niihin varautuminen

Tutkimukseen osallistumisesta ei odoteta aiheutuvan riskejä, haittoja tai epämukavuuksia.

Opinnäytetyön tutkimuksen kustannukset ja korvaukset tutkittavalle

Tutkimukseen osallistumisesta ei makseta palkkiota.

Opinnäytetyön tutkimustuloksista tiedottaminen ja tutkimustulokset

Tutkimuksesta valmistuu opinnäytetyö.

Tutkimus julkaistaan valmistumisen jälkeen sähköisesti Theseus alustalla.
Tutkimukseen osallistuneita ei voi tunnistaa tuloksista eikä julkaisuissa. Tutkimukseen osallistuvien tunnisteellisia tietoja ei tuloksiin tai julkaisuun dokumentoida.

Lisätietojen antajan yhteystiedot

Pauliina Kämäräinen
[redacted]

SUOSTUMUS OPINNÄYTETYÖN TUTKIMUKSEEN OSALLISTUMISESTA

[PERSON-CENTRED APPROACH IN DIGITAL HEALTH DEVELOPMENT]

Opinnäytetyöhön liittyvä tutkimus tehdään Teamsissa ja toteuttajana on Pauliina Kämäräinen

Minua _____ pyydetty osallistumaan yllä mainittuun opinnäytetyö tutkimukseen, jonka tarkoituksena on selvittää miten [redacted] on huomioitu terveydenhuollon digitaalisten ratkaisujen palvelujen elinkaaren eri vaiheissa ihmiskeskeinen lähestymistapa ja millaisia edistäviä ja estäviä tekijöitä ko. lähestymistavan toteuttamiseen tunnistetaan [redacted] toiminnassa.

Olen lukenut ja ymmärtänyt saamani kirjallisen tutkimustiedotteen. Tiedotteesta olen saanut riittävän selvityksen tutkimuksesta ja sen yhteydessä suoritettavasta henkilötietojen keräämisestä, käsittelystä ja luovuttamisesta. Tiedotteen sisältö on kerrottu minulle myös suullisesti, minulla on ollut mahdollisuus esittää kysymyksiä ja olen saanut riittävän vastauksen kaikkiin tutkimusta koskeviin kysymyksiini.

Minulla on ollut riittävästi aikaa harkita osallistumistani tutkimukseen. Olen saanut riittävät tiedot oikeuksistani, tutkimuksen tarkoituksesta ja sen toteutuksesta sekä tutkimuksen hyödyistä ja riskeistä. Minua ei ole painostettu eikä houkuteltu osallistumaan tutkimukseen.

Ymmärrän, että tietojani käsitellään luottamuksellisesti eikä niitä luovuteta sivullisille. Ymmärrän, että osallistumiseni on vapaaehtoista ja että voin peruuttaa tämän suostumukseni koska tahansa syytä ilmoittamatta. Peruuttamisen jälkeen aineistoa ei käytetä tutkimuksessa.

Allekirjoituksellani vahvistan osallistumiseni tähän tutkimukseen ja suostun vapaaehtoisesti tutkimushenkilöksi.

Päivämäärä

_____

Allekirjoitus

Puhelinnumero (jos tarvitaan tarkentavia tietoja):

_____

Suostumuslomake tehdään kahtena kappaleena. Toinen kappale sekä tiedote tutkimuksesta jäävät

tutkittavalle sekä toinen kappale opinnäytetyön toteuttajalle.

ANNEX 3: Example 2 of thematic analysis

Original expression		Reduced expressions	Sub-theme	Theme
B	Dialogue is held with the client when procuring a system, on what their goals are to the system and how it should enable and promote their operations and services, and through that, the patient.	In dialogues with clients, the objectives of the system to be procured are clarified	Clients' needs for development of digital health services are clarified in different forums	Understanding and clarifying various needs should guide the development
F	Quite often I, through different requirements and operating models try to dig what the real need is and what is the challenge where a solution is needed.	Clients' needs are being clarified.		
I	The clients bring information to our substantive experts, and they have already tentatively assessed the subject on what the patient perspective is	Clients bring forward their needs to substantive experts.		
I	We have found out beforehand or then there is a need for workshops. Yes, it is in some cases very good that we have certain people from there (client organization), who can comment on certain specs.	Workshops are organized as needed to clarify specs for procurements.		
H	Of course, it requires that the clients participate in addressing the current state and how it could work smarter	Clients bring forward information on current state and needs.		
L	Your need to be an expert that you can even recognize that there are for example deaf, blind and wheelchair users. If patients use that service, you need to take into account that the field is broad.	Expert needs to recognize different needs and client groups.		
H	In functional requirements, if you need to understand where it concretely appears, I believe they are recognized through use cases.	Use cases are used to recognize functional requirements.		
J	We listen to our clients' needs and innovate new solutions and how current solutions can be utilized, with a future orientated view	Listening to the client's needs		
K	Feed-back in continuous services brings forth clients' or end-users' thoughts.	Listening to the needs through feed-back		
K	We listen to our clients, to whom we procure the service, for example on who uses the service, what are the needs and requirements and go through the material and they accept the final documents.	Clients' needs are listened in procurements.		
H	If necessary, we escalate it to the clients and ask, if our own knowledge is not enough.	Additional information is obtained from the client		
J	To us, the patient is not practically visible. The needs come from our clients, health care professionals, root users and tell us that this works like this and to make it better, it should work like this	The needs come from the clients.		
M	Of course, different user groups in clients or residents, you need to take into account for example home health services, visually impaired, auditory problems et cetera.	Needs of different user groups are taken into account.		

K	We need to have years, capable ears and really listen to our clients. That is where the needs come, not necessarily detailed needs, but overall needs, in the form of use-cases	Listening to clients to clarify needs.		
K	We need to have years, capable ears and really listen to our clients. That is where the needs come, not necessarily detailed needs, but overall needs, in the form of use-cases	Client needs emerge from use cases		
M	And then the needs come from the operative field.	The needs come from the operating field.		
C	Going to the level of the user. Understanding who the user is. Understanding what the needs are, maybe the challenges. Understanding to who we do this for, I think that is the questions, this is a hard thing to understand.	User needs should be understood	Clients' needs must be understood as they guide operations	
F	The biggest stone in my shoe is that we do not know our clients well enough, and I think we should understand within the individual role what moves diabetes nurse, what is important to them and what an endocrinologist does in a daily basis. That way we can really start to understand and maybe see in a new way how we can help them. It would help.	Clients' health care professionals can be helped if their needs were known		
M	It starts with acknowledging the need and where it stems from and what it is	Developing starts with acknowledging the needs.		
J	The forefront needs to be visible to get an understanding of what the solution needs to be like and how it supports the user, this needs to be developed.	Better understanding is needed of the operations		
E	I think the problem is, from our teams' perspective, just like my colleague here said, that we get to join the discussions of the clients' needs too late.	Some teams get to join discussions of the clients' needs too late.	Clients' needs are not known if there is no connection with the clients.	
E	What should be done? Well, first of all we need to know our clients and have a real connection, so that we know what is really happening and what they need and what is coming. So this knowledge, communication and cooperation is very important	There should be a connection to the clients to understand their needs.		
F	The biggest stone in my shoe is that we do not know our clients well enough, and I think we should understand within the individual role what moves diabetes nurse, what is important to them and what an endocrinologist does in a daily basis. That way we can really start to understand and maybe see in a new way how we can help them. It would help.	Health care professionals' practical needs are not known.		
H	Sometimes it feels that we assume things and then procure some system and start implementing it. Then the questions begin to emerge from the client that this is not what was ordered, how did it end up like this? It does not work.	Solutions might not meet expectations if needs were assumed.		

C	for example, in my positions I am not involved deep enough in the clients' operations so that I could help them better	If the clients' operations are not known, it is difficult to support them.		
M	You need to work hard to reach their trust to get access to their operation	Difficulties in getting access to the clients' operations.		
L	I think it includes, if you procure for example a patient record system that you know that you have to take into account laws, directives and such.	Laws and directives need to be taken into account in procurements.	Development needs come from different sources	
L	Of course, with, for example, patient record systems, you need to make sure that security bans and all the regulations regarding information of under-aged people are implemented and how different patient information need to be logged and used.”	An expert needs to acknowledge different obligations and requirements of the health care environment		
L	The development in all continuous services stem from clients' need, changes in law and all that.	Needs for continuous services come from client's needs.		
L	The development in all continuous services stem from clients' need, changes in law and all that.	Needs for continuous services come from changes in law		
M	Pilots seek end user experiences. That is the main reason, not just to test the technology, but also usability.	Pilots seek end-user experiences.		
M	Based on the pilot findings, the follow-up pilot may be modified or, when transferring to production, it is taken into account in the roadmap, that in the future, this is a clear development target that is desired	Pilot findings guide future development		
M	We actively follow changes in the law in our roadmaps. When it comes to compulsory changes”	Law changes are actively followed		
M	Active following of what is happening in the field, through meetings with suppliers, technology surveys on what new is coming, networking and events and such	The development of the industry is actively followed		
D	When it has been put to production and then see if there is for example a lot of feed-back and develop it accordingly.	Developing according to clients’ feedback	Feedback guides development	
D	Does it come up from some client committees or some other forums or from the professionals in the field that this is causing problems, and this requires some kind of development, that in a way how it is taken into account, in my opinion, it is precisely the prioritization that matters	Insights from client feedback guide development		
D	Then there is client feed-back and developing services through them. So, if there is a lot of feed-back to the client organization this is brought forward that ok should we do this to this thing.	Clints’ feedback guides development		
M	We have a continuous user panel, and we have different follow-ups in different levels. Follow-up groups, steering group, management group, user panel. The of course there is CAP when it comes to changes.	The functionality of the services in various forums is actively monitored.		

L	We just talked that a lot of development suggestions have come from the field. And feed-back, they have made very good notions. And to us, if you get feed-back, it is very easy, if you get feed-back, you can react.”	Development ideas come from service request and feed-back.		
B	At least I have not attended situations, where the end-user, patient or client was involved.	Patients have not been involved in development	Patient involvement varies	
A	If planned ahead, patients could be involved more in discussions where the aim of the solutions is determined.	Patients could be involved more		
D	User studies have been implemented, for example on a prototype, where real people came to click the prototype and then a study was conducted on how they find things in there and how the user interface should be done.	Service design has been used with patient involvement		
M	Development and implementation in general that there are nurses, doctors or citizens involved.	The aim is to involve patients and professionals in development and implementation		
F	Sometimes end-users are involved in procurement and other projects to get an understanding of the current situation.	End-users are occasionally involved		
M	Then involving, depending on the situation, the patients.	Involving patients depends on the situation		

ANNEX 4: Summary of themes and sub-themes

OUTCOMES	THEME	SUB-THEME
Outcomes	person-centred approach various aspects need to be considered	• Views of person-centered approach • Health care professional's role must be taken into account and support them
	The patient is mostly identified as a central actor of operations by acknowledging them using different methods.	• The patient is the central starting point of services and is an underlying aspect • The patient is considered in different descriptions at different stages of development using different methods • Challenges in patient centredness
	Understanding and clarifying various needs should guide the development	• Clients' needs for development of digital health services are clarified in different forums • Clients' needs must be understood as they guide operations • Challenges in clarifying the needs • Development needs come from different sources • Patients' involvement varies
	The goal is to deploy digital health solutions that are easy to use, flexible, accessible and safe.	• The flexibility of the solutions • Data protection and information • Ease of use • Usability • Accessibility
	There are internal factors in the company's operation culture that both support and hinder the implementation of person-centred approach.	• Person-centeredness taken into account at a strategic level • Will to be innovative, forward-thinking and proactive in development • Siloing in the company • Varience in the needs and execution of practical instructions • The company's health care experts support development • The company's broad expertise should be utilized more • Challenges in co-operation with stakeholders